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FURTHER ASSESSMENT OF SOILS CONTAINING RESIDUAL PERCHLORATE

Azusa Irwindale Study Area

Former Aerojet-General Corporation Facility

Azusa and Irwindale, California

Prepared for:

California Regional Water Quality Control Board

Los Angeles Region

RWQCB File No. 108.1692; SLIC ID. No. 2049R00

Prepared by:

Geomatrix Consultants, Inc.

250 E. Rincon Street, Suite 204

Corona, California 92879

(951) 273-7400

April 18, 2006

Project No. 007190.005.0



Geomatrix

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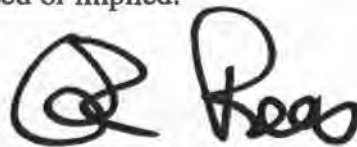
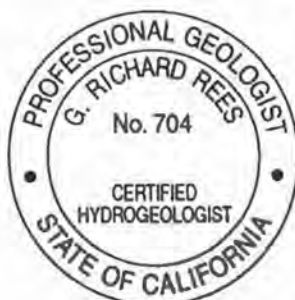
**FURTHER ASSESSMENT OF SOILS
CONTAINING RESIDUAL PERCHLORATE**

Azusa/Irwindale Study Area
Azusa and Irwindale, California

April 18, 2006
007190.005

This report was prepared by the staff of Geomatrix Consultants, Inc., under the supervision of the Engineer and/or Geologist whose signatures appear hereon.

The findings, recommendations, specifications, or professional opinions are presented within the limits described by the client, after being prepared in accordance with generally accepted professional engineering and geologic practice. No warranty is expressed or implied.

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TABLE OF CONTENTS

		Page
1.0	INTRODUCTION.....	1
1.1	BACKGROUND INFORMATION.....	2
1.2	REPORT CONTENTS	3
2.0	SITE CONDITIONS	4
2.1	SITE GEOLOGY	4
2.2	SITE HYDROGEOLOGY	5
3.0	SUMMARY OF PREVIOUS INVESTIGATIONS	6
3.1	FORMER GRINDING STATION 6.....	7
3.2	FORMER MIXING STATIONS 8 AND 9	7
4.0	WORK PLAN IMPLEMENTATION	7
4.1	PRE-FIELD ACTIVITIES	8
4.2	DRILLING AND LITHOLOGIC LOGGING.....	9
4.3	SOIL SAMPLING	10
4.4	SAMPLE HANDLING AND ANALYSIS	11
4.5	SURVEYING	11
4.6	EQUIPMENT WASH AND INVESTIGATION DERIVED WASTE	11
5.0	FIELD ASSESSMENT RESULTS.....	11
5.1	LITHOLOGIC LOGGING.....	11
5.2	SOIL SAMPLING RESULTS	12
	5.2.1 Former Grinding Station 6	12
	5.2.2 Former Mixing Stations 8 & 9	13
5.3	DATA QUALITY ASSESSMENT	14
5.4	DISTRIBUTION OF PERCHLORATE IN SOILS	15
6.0	DEVELOPMENT OF SOIL SCREENING LEVELS	16
6.1	CONCEPTUAL MODEL OF PERCHLORATE MIGRATION IN THE VADOSE ZONE	18
6.2	NUMERICAL MODELING OF POTENTIAL IMPACTS TO GROUNDWATER	20
	6.2.1 VS2DT Model Construction	20
	6.2.2 Model Input Parameters	20
	6.2.3 Predicted Impacts to Groundwater	21
	6.2.4 Model Sensitivity and Uncertainty Analyses	22
	6.2.5 Proposed SSL for Perchlorate	23
7.0	CONCLUSIONS AND RECOMMENDATIONS.....	24
8.0	REFERENCES.....	26

TABLE OF CONTENTS

(Continued)

TABLES

Table 5-1	Summary of Analytical Results for Perchlorate in Soil Samples
Table 5-2	Summary of Analytical Results for QA/QC Samples
Table 6-1	Summary of Vadose Zone Soil Physical Parameters
Table 6-2	VS2DT Input Parameters
Table 6-3	VS2DT Sensitivity Simulations

FIGURES

Figure 1-1	Site Location Map
Figure 1-2	Study Area within the AISA
Figure 1-3	Study Area Site Map Showing Borings and Wells
Figure 5-1	Depth Zone Summary of Analytical Results for Perchlorate in Soil
Figure 5-2	Distribution of Perchlorate Above 20 Feet BGS
Figure 5-3	Distribution of Perchlorate Between 20 Feet and 40 Feet BGS
Figure 5-4	Distribution of Perchlorate Below 40 feet BGS
Figure 5-5	Study Area Showing Cross Section Lines
Figure 5-6	Cross Section A-A', Cross Section B-B' and Cross Section C-C'
Figure 6-1	VS2DT Model Domain and Source Areas
Figure 6-2	Predicted Perchlorate Concentration in Groundwater, No Infiltration Scenario
Figure 6-3	Predicted Perchlorate Concentration in Groundwater, Infiltration of Precipitation Scenario

PLATE

Plate 1	Study Area with Summary of Analytical Results for Perchlorate in Soil Through March 2006
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APPENDIXES

Appendix A	Boring Logs
Appendix B	Survey Data
Appendix C	Laboratory Reports and Chain of Custody Forms

FURTHER ASSESSMENT OF SOILS CONTAINING RESIDUAL PERCHLORATE

Azusa Irwindale Study Area
Azusa and Irwindale, California

1.0 INTRODUCTION

Geomatrix Consultants, Inc. (Geomatrix), has prepared this report on behalf of Aerojet-General Corporation (Aerojet), to present: (1) the findings of further assessment of soils containing residual perchlorate in vicinity of Former Aerojet Grinding Station 6 (Former Buildings 6/6A), the Former Aerojet Solid Propellant Mixing Stations 8 and 9 (Former Buildings 8/8A and 9/9B, respectively) on or adjacent to the former PerkinElmer Optoelectronics SC, Inc. (PerkinElmer) property, and (2) development of Soil Screening Levels (SSLs) for perchlorate in the shallow vadose zone that are protective of underlying groundwater. The SSL for perchlorate in the shallow vadose zone developed in this report is intended to be used as a preliminary soil screening level, to guide characterization and remediation planning activities relative to the protection of groundwater. The perchlorate SSL is not intended to be used directly as a remediation or cleanup goal for soils containing residual concentrations of perchlorate because remediation or cleanup goals need to consider other factors such as existing land use, future land use, effectiveness, implementability, and cost.

The former PerkinElmer property is located within the Azusa Irwindale Study Area (AISA), which consists of properties formerly owned or leased by Aerojet covering an area of approximately 125-acres in Azusa and Irwindale, California (Figure 1-1). For purposes of this report, the former PerkinElmer property and adjacent areas will be referred to as the Study Area. The location of this Study Area within the AISA is shown on Figure 1-2 and a detailed Study Area site map is shown on Figure 1-3. The former PerkinElmer property consists of four parcels (Figure 1-3):

- two parcels on the western side of the property that are occupied by existing Buildings 1 and 2,
- one parcel on the northeast corner of the property occupied by existing Building 3, and
- one parcel on the southeast part of the parcel occupied by existing Building 4.

PerkinElmer sold all of these properties by the end of 2005. Proficiency SGV LLC (Proficiency) currently owns the two western parcels (Buildings 1 and 2) and the southeastern parcels (Building 4). Dragonis Investments, LLC (Dragonis) currently owns the northeastern parcel with Building 3.

The term Areas of Concern (AOCs), which carried a "PE" designation for the AOCs on the former PerkinElmer property, will no longer be used to name areas of perchlorate affected soil in the Study Area because these areas have changed and some have merged based on the findings described in this report. Throughout this report, areas of perchlorate affected soil will be referred to by the former operations in the area affected which was the basis of the AOC designations. For cross reference with previous documents, the four AOCs in the Study Area included PE-1 for the area in the vicinity of the Former Grinding Station 6, PE-2 for the area in the vicinity of Former Mixing Station 8, PE-3A (later renamed PE-3) for the area in the vicinity of Former Mixing Station 9, and PE-3B (later renamed PE-4) for the area south and west of Former Mixing Station 9.

1.1 BACKGROUND INFORMATION

This report describes activities performed to further characterize soils containing residual perchlorate in the areas identified in the *Remedial Action Plan (RAP) for Soils Containing Residual Perchlorate* dated June 28, 2002 (Geomatrix 2002a). The RAP and two addenda (Geomatrix, 2002b and Geomatrix 2003) were submitted to the Los Angeles Regional Water Quality Control Board (LARWQCB) for review and approval. The RAP and addenda evaluated a number of remedial alternatives and concluded that institutional controls (e.g., maintenance and/or installation of a pavement cap) that prevented infiltration of precipitation or surface runoff was protective of underlying groundwater by limiting downward migration of perchlorate in the vadose zone. In November 12, 2004, however, the LARWQCB requested further investigation of the lateral and vertical extent of perchlorate in soils in the Study Area and the development of site-specific SSL for residual perchlorate in the shallow unsaturated zone that is protective of underlying groundwater. As a result, Aerojet submitted a work plan for further assessment of perchlorate in the Study Area titled *Work Plan for Further Assessment of Perchlorate in Soils at Areas of Concern* (Work Plan) on January 11, 2005 (Geomatrix, 2005a).

Following LARWCB approval of the Work Plan on February 11, 2005, field work commenced and sampling was conducted in March and April, 2005. Preliminary sampling results indicated that additional characterization of the lateral and vertical extent of perchlorate in soils was

necessary to achieve the objectives of the Work Plan prior to submitting a Technical Report documenting the results of the sampling outlined in the Work Plan to the LARWQCB. Consequently, Aerojet requested a technical meeting with the LARWQCB to discuss the preliminary sampling results and the need for further sampling. This meeting was held on May 26, 2005 where it was agreed that LARWQCB would extend the deadline for submittal of the Technical Report provided that Aerojet provide: 1) a formal request for extension of the deadline of the Technical Report, 2) preliminary sampling results for samples collected in March and April 2005, and 3) an addendum to the Work Plan proposing additional sampling activities. The extension request and preliminary sampling results were submitted to the LARWQCB in a letter from Geomatrix dated May 31, 2005. This letter also indicated that a Work Plan Addendum proposing additional characterization activities and a revised schedule for completion of the sampling would be provided to the LARWQCB by June 30, 2005.

On June 30, 2005, Geomatrix, on behalf of Aerojet, submitted a *Work Plan Addendum for Further Assessment of Perchlorate in Soils at Areas of Concern* (Work Plan Addendum) (Geomatrix, 2005b) and requested approval of the Work Plan Addendum before commencing with sampling activities. On September 13, 2005, the LARWQCB provided approval of the Work Plan Addendum with several conditions including sampling beneath of the foundation slab of Building 4 and the use of a field sampling protocol for perchlorate developed by the California Department of Toxic Substances Control. Aerojet provided a response to the conditional approval of the Work Plan Addendum in a letter to the LARWQCB dated October 11, 2005. Mr. Robert Ehe with the LARWQCB responded to October 11, 2005 letter via an electronic mail to Mr. Scott Goulart with Aerojet on October 20, 2005 indicating that several issues associated with the approval of the Work Plan Addendum were still outstanding. As a result, Aerojet requested further clarification in a letter to the LARWQCB dated November 8, 2005. The LARWQCB provided further clarification to the conditional approval of the Work Plan Addendum in a letter to Aerojet dated January 24, 2006. This letter also requested the submittal of this report by April 18, 2006.

1.2 REPORT CONTENTS

The remainder of this report describes the field methods and analytical results associated with sampling activities to further assess the extent of soils containing residual perchlorate in the Study Area as outlined in the Work Plan and Work Plan Addendum. In addition, this report presents an evaluation of the lateral and vertical extent of contamination in the Study Area, presents an evaluation of the threat that perchlorate poses to groundwater in the shallow vadose zone, and presents a SSL that is protective of underlying groundwater. This SSL is to be used

for remedial action planning for soils containing residual perchlorate in the shallow unsaturated zone.

2.0 SITE CONDITIONS

The AISA comprises approximately 125 acres in the cities of Azusa and Irwindale in the north-central portion of the San Gabriel Valley, Los Angeles County, California. The study area lies at the base of the foothills of the San Gabriel Mountains near the mouth of Fish Canyon, approximately 1.5 miles east of the San Gabriel River/Santa Fe Flood Control Basin, immediately east of Irwindale Avenue, and just south of the 210 Freeway (Figure 1-1). Properties currently within the AISA include office, light industrial, and research and development buildings, with concrete and/or asphalt roadways and parking areas. The vast majority of the Site is covered with asphalt or concrete surfaces, and various buildings. Only small areas of decorative landscaping within the developed area comprise the exposed earth surfaces. The north boundary of the AISA encompasses portions of the former, partially backfilled gravel pit known as the Kincaid Pit, which is now crossed by the 210 Freeway. The south-central boundary of the AISA is the Azusa Land Reclamation Company gravel pit and landfill.

2.1 SITE GEOLOGY

The subsurface geology at the AISA has been investigated by the drilling, logging, and sampling of numerous borings and wells to depths as great as 350 feet. The vadose zone and the underlying groundwater aquifer consist of unconsolidated alluvium composed of poorly sorted sand and gravel with the gravel fraction containing cobbles and boulders as large as two feet in diameter. Thin (3- to 5- foot thick), well-sorted silt and sand layers have been encountered sporadically during drilling activities in the vadose and saturated zones.

The distribution of the poorly sorted sand and gravel with rare fine-grained silt and sand layers in the subsurface at the AISA is consistent with the deposition of sediments in a high-energy proximal alluvial fan environment. The sediments originate from the nearby San Gabriel Mountains. Fine-grained deposits associated with a proximal alluvial fan environment are typically lenses that are elongated parallel to the source direction and are not laterally continuous; therefore, precise stratigraphic correlation of the numerous fine-grained lithologic units between boreholes is difficult. This results in a scale-dependent homogeneity of coarse-grained alluvial sediments in the subsurface at the AISA.

2.2 SITE HYDROGEOLOGY

Saturated conditions, representing the top of the unconfined (water table) aquifer underlying the AISA, are generally encountered at depths ranging from 265 to 345 feet below ground surface (bgs). Since the first groundwater monitoring wells were installed within the AISA in September 1992, water-level elevations have fluctuated by as much as 40 feet in a year. Water-level elevations reached a maximum of approximately 290 feet above mean sea level (msl) in mid-1993 and declined approximately 75 feet by 2002. Following heavy precipitation at the end of 2004 and beginning of 2005, groundwater recovered to approximately 270 feet msl. These fluctuations in groundwater levels are attributed to groundwater recharge and mounding from seasonal infiltration of precipitation, groundwater recharge at the Santa Fe Spreading Grounds (located approximately 1.0 mile west of the AISA), and regional declines resulting from groundwater pumping for water supply purposes in the San Gabriel Basin. Primary directions of groundwater flow within the AISA are to the southwest. However, flow generally shifts to the west during periods of declining water levels and to the east and southeast during periods when groundwater levels are rising due to groundwater recharge at the Santa Fe Spreading Grounds.

The hydraulic properties of the aquifer sediments underlying the AISA have been measured in the area downgradient of the AISA by conducted aquifer tests on large capacity groundwater supply wells. The most reliable of these tests were conducted on groundwater extraction wells located approximately 1½ miles downgradient of the AISA, in the vicinity of the Valley County Water District Arrow/Lante Treatment Plant. These tests yielded average aquifer hydraulic conductivities from near field observations wells ranging from 275 to 452 feet per day (Geomatrix, 2005d). Effective porosities of the aquifer sediments are assumed to be comparable to specific yield estimates of 0.09 (unitless) based on the calibration of groundwater flow model of the San Gabriel Basin. Hydraulic gradients measured within the AISA range from 0.001 to 0.005 feet per foot as estimated from groundwater elevations measured within monitoring wells at the AISA. On the basis of these estimates of aquifer hydraulic properties and hydraulic gradients, groundwater flow velocities beneath the AISA are estimated to range from 3 to 25 feet per day.

Groundwater beneath the site flows to the southwest consistent with the regional groundwater flow gradient. Consequently, chemicals observed in groundwater beneath the site migrate downgradient via advective transport in groundwater at a rate equivalent to or less than the groundwater flow velocity. In accordance with the EPA CERCLA response action for the

Baldwin Park Operable Unit (BPOU), this groundwater will be extracted and treated at the BPOU groundwater extraction and treatment facilities.

3.0 SUMMARY OF PREVIOUS INVESTIGATIONS

As described in the RAP, a comprehensive investigation of potential sources of perchlorate and other “emergent chemicals” was conducted in the AISA in two phases in 2000 and 2001. The results of this Emerging Chemicals Investigation (ECI) were presented in reports submitted to the LARWQCB on October 15, 2000 and April 30, 2001 (HLA, 2000 and HLA, 2001). The RAP included a site-specific evaluation of potential threats to groundwater quality that indicated only three of the possible source areas had the potential to impact groundwater at concentrations above 4 micrograms per liter ($\mu\text{g/l}$), the California Interim Action Level for perchlorate at the time the RAP was submitted.

Based on the ECI results and the evaluation presented in the RAP, five AOCs were identified within these three potential source areas. One of these AOCs (PE-1) was near Former Grinding Station 6 and three additional AOCs (PE-2, PE-3A, and PE-3B) were defined for the area associated with the Former Mixing Stations 8 and 9. The AOC designations were modified slightly (renaming AOCs PE-3A and PE-3B as PE-3 and PE-4, respectively) for the subsequent Work Plan and Addenda. The “PE” designation indicates the four AOCs are located on former PerkinElmer property. The fifth AOC is located at the Former Waste Treatment Facility, WT-2 (NG-1), located on Northrop Grumman (NG) property. Further assessment of AOC NG-1 is not addressed in this Report because soil excavation is not considered to be practicable and implementable at this location due to the extreme depth of contamination (greater than 200 feet below ground surface). The NG-1 AOC was addressed by a remedial action consisting of engineering controls to minimize potential migration of perchlorate to underlying groundwater as documented in a Construction Completion Report for this area issued in June 2005 (Geomatrix, 2005d).

Consequently, additional assessment activities were directed to areas where soil excavation has been identified as a practicable and implementable remedial alternative. That is, the areas previously identified as AOCs PE-1, PE-2, PE-3, and PE-4. Based on the findings described in this Report (a refined understanding of the distribution of perchlorate in soil) and our current understanding of the location of former Aerojet buildings (Figure 1-3), the AOCs designations have been replaced by the description of the former facility operations to describe the areas of perchlorate affected soil. Former Grinding Station 6 replaces AOC PE-1 whereas AOCs PE-2,

PE-3, and PE-4 are combined into one area representing the vicinity of the Former Mixing Stations 8 and 9. A description of the results of previous investigations for perchlorate in these areas is provided below.

3.1 FORMER GRINDING STATION 6

Former Grinding Station 6 is located on property currently owned by Proficiency and Dragonis and is located at the northeast corner of Building 2. During previous investigations, two soil borings were drilled to depths of 30 feet bgs to investigate for the occurrence and extent of perchlorate in soils in this area (Figure 1-3). Boring PSZB-06 was drilled to the west of the Former Grinding Station 6 just outside a landscaped area on the north side of Building 2 (Figure 1-3). Observed perchlorate concentrations were 3,000 and 120 $\mu\text{g}/\text{kg}$ at depths of 5 and 10 feet, respectively. Perchlorate was not detected at depths greater than 10 feet or in an adjacent boring (PSZB-05) located approximately 50 feet to the east-northeast (Figure 1-3).

3.2 FORMER MIXING STATIONS 8 AND 9

This area is located on property currently owned by Proficiency and NG and extends east from Building 2 and to the north and south of Building 4. During previous investigations, two soil borings were drilled to depths of 30 feet bgs to investigate for the occurrence and extent of perchlorate in soils southwest of Former Mixing Station 8 (Figure 1-3). Observed perchlorate concentrations in PSZB-10 were 1,400 and 100 $\mu\text{g}/\text{kg}$ at depths of 5 and 10 feet, respectively. No perchlorate was detected at depths greater than 10 feet or in the second boring (PSZB-09) located about 75 feet to the south (Figure 1-3).

Three borings were drilled near the Former Mixing Station 9, located between Buildings 3 and 4 (Figure 1-3). During previous investigations, four soil borings (PSZB-11, PSZB-12, PSZB-19 and PSZB-20) were drilled to depths of 27 to 30 feet bgs to investigate for the occurrence and extent of perchlorate in soils in this area (Figure 1-3). Observed perchlorate concentrations were 180 $\mu\text{g}/\text{kg}$ at a depth of 5 feet in PSZB-11 and 100 $\mu\text{g}/\text{kg}$ at a depth of 5 feet in PSZB-12. No perchlorate was detected at depths greater than 5 feet in either Boring PSZB-11 or PSZB-12.

4.0 WORK PLAN IMPLEMENTATION

Drilling and soil sampling for the implementation of the Work Plan and Work Plan Addendum was performed in two field mobilizations. The first mobilization began on March 21, 2005 and consisted of the drilling of 27 shallow zone boring locations with total depths ranging from 30

to 40 feet (PSZB-21 through PSZB-44, PSZB-46, PSZB-47, and PSZB-49). A total of 237 soil samples were collected and analyzed for perchlorate. The first mobilization was completed on April 1, 2005.

The second mobilization^{*} began on February 7, 2006 and consisted of the drilling of 26 shallow zone boring locations with total depths of 40 feet (PSZB-45, PSZB-48, PSZB-50 through PSZB-70, and PSZB-72); six intermediate locations with total depths of 100 feet (PIZB-01 through PIZB-06); and two near surface borings with total depths of 5 feet (PSZB-71 and PSZB-73). A total of 349 soil samples were collected and analyzed for perchlorate. The second mobilization was completed on March 7, 2006.

Both field mobilizations include similar scopes of work including:

- Pre-field activities,
- drilling and soil sampling,
- equipment wash and investigative derived waste disposal,
- sample handling and analysis, and
- surveying.

The methods used during this assessment, including pre-field activities, drilling, soil sampling, sample handling and analysis, surveying, equipment wash and investigative derived waste disposal are described in the following sections. Field activities for both mobilizations were performed in general conformance with each other except where specifically noted.

4.1 PRE-FIELD ACTIVITIES

The pre-field activities consisted of utility clearance, permitting, and preparation of a site-specific Health and Safety Plan (HSP). Specifically these activities included:

- Retaining Sub Surface Surveys, a private underground utility locator from Solana Beach, California, to screen the planned drilling locations for potential underground utilities or buried objects;
- marking the drilling locations and notified Underground Services Alert (USA) of the planned subsurface assessment activities;
- obtaining an encroachment permit from the City of Azusa for borings located in the public right of way; and

- updating the project-specific HSP. A field copy of the HSP was maintained at the work site during all field activities. The HSP identified potential health and safety hazards associated with the field activities, outline general safe work practices for personnel at the site, define personal protective equipment requirements, and described specific measures to be undertaken in case of an emergency.

4.2 DRILLING AND LITHOLOGIC LOGGING

Geomatrix contracted with Layne Christensen Company, a licensed (C-57) drilling company from Fontana, California, to advance twenty-seven borings, ranging in depth from 30 to 40 feet bgs between March and April 2005 (first phase). An additional twenty-four borings each to a depth of 40 feet bgs, six borings each to a depth of 100 feet bgs, and two borings each to depth of 5 feet bgs were advanced between February and March 2006 (second phase). During the second phase of characterization work Geomatrix contracted with BC² Environmental Corp., a licensed (C-57) drilling company from Fullerton, California, to air-knife twenty-four of the thirty-two boring locations each to a depth of 5 feet bgs. Air-knifing was done to ascertain that boring locations were free from subsurface utilities and/or obstructions prior to drilling. Drilling was performed on all shallow borings using dual-wall casing, air percussion, hammer drilling methods. This method uses a hammer on the drill rig to drive the casing. High pressure air is pushed down the outer casing annulus to the drill bit at the bottom of the boring and carries the cuttings out of the boring through the inner casing annulus to a cyclone separator.

One deep boring (PIZB-06) was drilled using an Air Rotary Casing Hamer (ARCH) methods. This method is similar to the dual wall percussion hammer but it uses a down-hole percussion hammer with a retractable drill bit, attached to an approximately 4-inch outside diameter (OD) drive pipe inserted through a threaded drive casing. Soil cuttings are forced to the surface by negative air pressure imparted on the drilled formation between the drive pipe and casing and flow through a cyclone separator. Groundwater was not encountered in any of the borings drilled. The borings were backfilled with bentonite chips using the drive casing as a tremie. The bentonite chips were hydrated with a continuous stream of potable water as the were placed. The surface at each boring location was patched with asphalt. A summary of the soil sampling activities is provided in the following subsections. Boring locations are shown on Figure 1- 3. Soil logging activities were performed by a Geomatrix field geologist under the supervision of a California Professional Geologist. The lithology was described from the cuttings from the cyclone separator and classified in accordance with the United Soil Classification System (USCS) and recorded on a soil boring log for each soil boring. Visual

grain-size distribution, color, moisture content, and other pertinent characteristics were included on the soil boring log. Boring logs are provided in Appendix A.

4.3 SOIL SAMPLING

Soil samples for chemical analysis from each borehole were collected at depths of 1-, 2.5-, 5-, 7.5- and 10-foot depths and then at 5-foot intervals to 50 feet and 10-foot intervals from 50 feet to the completion depth of the borehole. Soil sampling was performed by a Geomatrix field geologist under the supervision of a California Professional Geologist.

In general, soil samples from the upper 1 to 2.5 feet of each soil boring were collected using either a hand trowel or by hand augering to ensure sample retrieval. Soil samples collected below 2.5 feet within the borehole were collected at the desired depths from the cyclone separator and placed in glass containers. Prior to sampling in the boring, the driller blew out the boring to clear any residual cuttings from the borehole prior to advancing to the sample depth. Soil sampling during the second phase of characterization work was similar to the first phase with the exception that soil samples collected from air knifed borings were sampled first for the 5-foot sample at the bottom of the boring using a hand auger and then the side walls of the air knifed boring were sampled for the 1 and 2.5-foot samples. If the bottom of the five foot boring could not be sampled with a hand auger, a 6-foot sample would be collected with the drilling equipment.

Depth-specific soil sampling from the remainder of each borehole was conducted directly from cyclone discharge on the drill rig after flushing the casing with air. As described in the Work Plan Addendum, soil samples were collected by placing a 5-gallon sample collection container directly below the cyclone discharge to capture the cuttings from the sample interval. Care was taken during the sample collection to minimize any loss of cuttings. Generally, advancing the casing 6 to 12 inches generated a sufficient volume of soil after which drilling is immediately stopped. The soil cuttings were then immediately placed into 4-ounce glass sample jars provided by the laboratory. Care was taken to ensure that the cuttings are homogenized to ensure that the soil sample is representative of the entire soil matrix. Typically, soil samples contained a mixture of coarse grained sand, gravel, broken cobble clasts, and finer grained soils. In instances when broken cobble clasts were too large to fit into the laboratory sample containers, the clasts were removed.

4.4 SAMPLE HANDLING AND ANALYSIS

Soil samples were collected and placed in 4-oz. glass jars, labeled, placed in sealable bags, and stored in a cooler with ice. All samples were handled and transported under Geomatrix chain-of-custody procedures and sent by lab courier to Del Mar Analytical Laboratories of Irvine, California for analysis by EPA Method 314.

4.5 SURVEYING

All borings were surveyed (vertical and horizontal) by Calvada Surveys, a licensed surveyor in the State of California, and referenced to mean sea level and the California State Plane Coordinate System. The survey was tied-in to the existing wells previously surveyed at the Site. The survey data are provided in Appendix B.

4.6 EQUIPMENT WASH AND INVESTIGATION DERIVED WASTE

All downhole drilling equipment was steam-cleaned prior to use and between soil boring locations. The driller set up a decontamination station south of Building 4 and allowed the wash water to pond on Visqueen plastic and evaporate. Between soil sampling intervals, the sampling equipment was washed with a detergent-water solution, rinsed with potable water and then rinsed again with deionized water.

Soil cuttings and wastewater from decontamination activities generated during sampling activities were temporarily contained in roll-off bins. The roll-off bins were transported off site by Romic Environmental under direct contract with Aerojet.

5.0 FIELD ASSESSMENT RESULTS

This section summarizes the results of the data collection activities described in the Work Plan and Work Plan Addendum as conducted in March – April 2005 (first phase) and February – March 2006 (second phase). The following subsections describe lithologic logging, soil sampling results, an assessment of data quality, and an evaluation of the distribution of perchlorate in soils within the Study Area.

5.1 LITHOLOGIC LOGGING

Results of the lithologic logging indicated that, in general, the site is underlain by sediments comprised of zones of gravel, sand, and silt. Lithologic descriptions of soil and drill cuttings from the borings are presented on the boring logs in Appendix A. As expected given the depth

to groundwater within the AISA, saturated conditions were not encountered in any of the borings which extended to a maximum total depth of 100 feet bgs.

5.2 SOIL SAMPLING RESULTS

A description and analytical results for soil samples collected during the first and second phase characterization work is provided below. All soil samples submitted were analyzed for perchlorate using EPA Method 314. Soil sample analytical results from this and previous assessments in the Study Area are summarized in Table 5-1. The laboratory analytical reports and chain-of-custody forms for this assessment (Phase I and Phase II) are provided in Appendix C. Figure 5-1 shows a graphical representation of concentration of perchlorate in soil in depth zones for each boring using a series of color coded wedges. An oversized plate showing perchlorate concentrations in soil samples at each boring location is provided as Plate 1. A summary of findings from this assessment is summarized below by the areas with residual perchlorate in soil. Soil sampling results indicated that investigation results were best presented for two generalized areas within the Study Area, 1) the vicinity around Former Grinding Station 6, and 2) the area around Former Mixing Stations 8 and 9.

5.2.1 Former Grinding Station 6

This area is located near the northeast corner of existing Building 2. Perchlorate concentrations within this area ranged from 43 $\mu\text{g/kg}$ to 66,000 $\mu\text{g/kg}$. The two highest concentrations of perchlorate (52,000 $\mu\text{g/kg}$ and 66,000 $\mu\text{g/kg}$) in soil were reported in the samples collected from depths of 5 and 7.5 feet bgs in boring PSZB-23, which was located near the approximate northern edge of Former Grinding Station 6. Perchlorate concentrations exceeding 5,000 $\mu\text{g/kg}$ were reported in soil samples from boring PSZB-24 (located at the southern part of Former Grinding Station 6) at a depth of 5 feet bgs, boring PSZB-36 (located approximately 40 feet north of the Former Grinding Station) at a depth of 2.5 feet, and boring PSZB-53 (located approximately 100 feet east-northeast of Former Grinding Station 6) at a depth of 2.5 feet bgs. No soil samples collected from borings in this area had reported concentrations greater than 5,000 $\mu\text{g/kg}$ below 7.5 feet.

Two borings were drilled to 100 feet bgs in this area to evaluate the vertical extent of perchlorate in soil and were drilled adjacent to shallow borings where perchlorate had been detected in the deepest sample collected in the boring. PIZB-01 was drilled adjacent to PSZB-23; PIZB-02 was drilled adjacent to PSZB-24. Soil analytical results from PIZB-01 indicated perchlorate concentrations ranging from 2,100 $\mu\text{g/kg}$ to 710 $\mu\text{g/kg}$ in the interval of 35 to 100 feet bgs. Perchlorate concentrations in samples collected at depths of 90 and 100 feet

bgs in this boring were 990 $\mu\text{g/kg}$ and 880 $\mu\text{g/kg}$, respectively. Soil analytical results from PIZB-02 indicated perchlorate concentrations ranging from 280 $\mu\text{g/kg}$ to non detect in the interval of 35 to 100 feet bgs. Perchlorate concentrations in samples collected at depths of 90 and 100 feet bgs in this boring were non detect and 88 $\mu\text{g/kg}$, respectively.

The limits of the occurrence of perchlorate in the vicinity of Former Grinding Station 6 appear to be defined by soil sampling from borings to the north, west, and south. Building 2 bounds the southwestern part of this area and Building 3 bounds the eastern edge of this area. Boring PSZB-53/53A bounds the east northeastern edge of the area. The northern and northeastern occurrence of perchlorate detected in soil samples from boring PSZB-52 has not been clearly established.

5.2.2 Former Mixing Stations 8 & 9

As described previously, soil sampling results for Former Mixing Stations 8 and 9 are presented together over an area that extends from approximately the southern property line of the parcel occupied by Building 3 to approximately 120 feet south of the property line between the parcel occupied by Building 4 and the Northrop Grumman property. On an east-west transect, the area extends from Building 2 on the west to approximately Aerojet Avenue on the east (Figure 5-1).

Perchlorate concentrations in this area ranged from 40 $\mu\text{g/kg}$ to 86,000 $\mu\text{g/kg}$. Two soil samples with concentrations exceeding 50,000 $\mu\text{g/kg}$ perchlorate were reported: a concentration of 86,000 $\mu\text{g/kg}$ at a depth of 2.5 feet bgs in boring PSZB-29 (located approximately 140 feet south of Former Mixing Station 8; and at a concentration of 75,000 $\mu\text{g/kg}$ at a depth of 7.5 feet bgs in boring PSZB-32 (located between the northern and southern part of Former Mixing Station 9).

Perchlorate concentrations exceeding 5,000 $\mu\text{g/kg}$ were reported in soil samples from boring PSZB-57 (located approximately at the southwestern part of the Former Mixing Station 8 at depths of 6 and 10 feet bgs, boring PSZB-49 (located approximately 120 feet south of Former Mixing Station 9) at a depth of 5 feet bgs, and boring PSZB-62 (located approximately 280 feet south-southeast of Former Mixing Station 8 and 280 feet south-southwest of Former Mixing Station 9) at a depth of 2.5 feet bgs.

With only one exception, no soil samples collected from borings at depths greater than 10 feet bgs in this area had reported perchlorate concentrations greater than 500 $\mu\text{g/kg}$. The one

exception was boring PSZB-46 (located approximately 30 feet northwest of Former Mixing Station 9/9B) which had concentrations of 1,800 $\mu\text{g/kg}$ and 3,700 $\mu\text{g/kg}$ at depths of 15 and 20 feet bgs, respectively.

Four borings were drilled to 100 feet bgs in this area to evaluate the vertical extent of perchlorate in soil. Two of the deeper borings were drilled north of Building 4 and in the vicinity of Former Mixing Station 9 (PIZB-05 and PIZB-06) and two 100 foot borings were drilled southwest and south of Building 4 (PIZB-03 and PIZB-04). PIZB-05 and PIZB-06 were drilled adjacent to or near shallow borings in which perchlorate had been detected in the bottom sample of the boring (e.g., PSZB-33, PSZB-46, and PSZB-47). PIZB-03 was drilled adjacent to PSZB-29, which indicated high concentrations of perchlorate in shallow soil; PIZB-04/04A was drilled adjacent to PSZB-31, which indicated a perchlorate concentration of 470 $\mu\text{g/kg}$ at the bottom of the boring (30 feet bgs).

Soil analytical results from PIZB-05 indicated non detect for perchlorate from 40 to 100 feet bgs. PIZB-06 indicated non detect for perchlorate from 10 to 100 feet bgs. Soil analytical results for PIZB-03 indicated perchlorate concentrations ranging from 64 $\mu\text{g/kg}$ to 98 $\mu\text{g/kg}$ in soil at depth of 45 to 80 feet bgs and non detect in the soil samples from 90 and 100 feet bgs. Soil samples from PIZB-04/04A indicated concentrations ranging from 58 $\mu\text{g/kg}$ to 250 $\mu\text{g/kg}$ in the depth interval of 25 to 90 feet bgs. The soil sample collected from a depth of a 100 feet in this boring was non detect ($< 40 \mu\text{g/kg}$).

The limits of the occurrence of perchlorate in this area appear to be defined by soil sampling from borings to the north, east, southeast, and southwest of Former Mixing Stations 8 and 9. Building 2 bounds the western part of this area. Soil sampling from borings located at the southern part of this area, extending onto Northrop Grumman property, suggests that perchlorate is limited to the upper to 5 to 10 feet of shallow soil at concentrations of 110 $\mu\text{g/kg}$ or less.

5.3 DATA QUALITY ASSESSMENT

The field quality assurance (QA) program was in conformance with Geomatrix field protocols and standard laboratory QC procedures. Laboratory reports for precision, accuracy, and/or surrogate recovery, generated by Del Mar, are provided in the laboratory report in Appendix C. A discussion of the field and laboratory QA program is provided below.

Field QC

A sample of the rinsate of laboratory supplied distilled water poured over the steam cleaned drill casing was collected prior to drilling during each field mobilization. Two rinsate samples were collected during the first mobilization (sample identification “032105EB”, and “032505EB”) were collected on March 21 and March 25, 2005, respectively. The rinsate sample collected during the second mobilization (sample identification “20060207EQB”) was collected on February 7, 2006. Analyses of these samples for perchlorate did not indicate the presence of this constituent in the rinsate samples above the laboratory reporting limit of 3 µg/l (Table 5-2). Laboratory analytical reports of the equipment rinse samples are provided in Appendix C.

Laboratory QA

The laboratory QA program included data package completeness, laboratory case narrative, chain-of-custody forms, analytical method holding time requirements, and an evaluation of surrogate recoveries, reagent and matrix spikes, matrix spike duplicates, and laboratory control samples (LCS). The QA program also consists of data validation performed by a qualified chemist in accordance with U.S. EPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review, EPA/540/R-99/008 (U.S. EPA, 2002). This review included checking QC values provided on the laboratory QC forms to the method QC criteria.

All laboratory QC criteria were within acceptable limits with the following exception:

- The laboratory indicated a raised reporting limit (200 µg/kg) for soil sample PSZB-69-1 due to sample matrix effects.

5.4 DISTRIBUTION OF PERCHLORATE IN SOILS

Soil sampling results were further evaluated using three-dimensional geospatial modeling program, EarthVision® to develop a better understanding of the lateral and vertical extent of observed perchlorate concentrations. Soil sampling results at each borehole location and discrete sampling depth were input into the EarthVision® software for interpolation of perchlorate concentrations between sample locations using the 3D minimum tension gridding technique. The minimum tension gridding algorithms calculate a smooth surface that closely fits the input data values using biharmonic-cubic spline techniques. This procedure produces a three-dimensional grid depicting the interpolated distribution of chemical concentrations throughout the defined volume. The technique is designed to match data where it exists, to

smoothly interpolate between known data points, and to extrapolate where there is no data using a splining technique to develop a smooth surface with a minimum curvature.

Following the development of a three-dimensional representation of the distribution of residual perchlorate in soils using the EarthVision® software, various perspectives of the lateral and vertical extent of perchlorate were evaluated. Interpolated perchlorate concentrations at depth intervals of 0 to 20 feet, 20 to 40 feet, and greater than 40 feet bgs are shown in plan view on Figures 5-2, 5-3, and 5-4. Each of these figures includes a three dimensional oblique angle view of the interpolated perchlorate distribution in lower left-hand corner of the figure. In addition, cross sections showing the vertical extent of perchlorate along three cross-section alignments (A-A', B-B', and C-C' section line alignments shown on Figure 5-5) through the Study Area are shown on Figure 5-6.

The evaluation of soil sampling results including the three-dimensional interpolation of the perchlorate concentrations using the EarthVision® software resulted in the following general conclusions regarding the lateral and vertical extent of perchlorate in the Study Area:

- The lateral extent of perchlorate in the Study Area has been characterized to concentrations of 40 µg/kg or less. There are two minor exceptions where concentrations above 40 µg/mg have not been completely bounded: 1) the area north of the northwestern corner of Building 3; and 2) the area south of Building 4.
- The vertical extent of perchlorate in the Study Area has been characterized to concentrations of 40 µg/kg or less and depths of less than 20 feet. There are two minor exceptions; 1) the area near the northeast corner of Building 2, and 2) the area south of Building 4.
- Five areas of highest perchlorate concentrations ("hot spots") were observed in the upper 20 feet in the Study Area. These "hot spots" are located near: 1) the northeast corner of Building 2; 2) the northeast corner of Building 4; 3) a very localized area near the northwest corner of Building 4; 4) a localized area southwest of the southwest corner of Building 4; and 5) a localized area south of the southern wall of Building 4. These "hot spot" locations are generally consistent with the current understanding of the former locations of Former Grinding Station 6, Former Mixing Station 8, and Former Mixing Station 9.

6.0 DEVELOPMENT OF SOIL SCREENING LEVELS

This section describes the development of SSLs for the shallow vadose zone, as requested by the LARWQCB in their letter of November 12, 2004. The LARWQCB indicated that a SSL cleanup level be developed that is protective of the underlying groundwater from further impact

by residual perchlorate in the shallow unsaturated zone. The LARWQCB also indicated that the development of an SSL should consider important parameters such as dry bulk density, permeability, porosity, saturated vadose zone hydraulic conductivity, aquifer hydraulic conductivity, and total organic carbon content in the development of the SSL. Further, the LARWQCB stated that the development of the SSL should consider uncertainties associated with various interdependent assumptions by conducting sensitivity and uncertainty analyses to allow for an understanding of the cumulative effect of uncertainty in the development of the SSL. In consideration of the LARWQCB guidance, an approach was formulated for the development of the SSL that utilized available site data to develop a conceptual model of perchlorate migration in the vadose zone and a numerical model of soil moisture movement and perchlorate migration to predict impacts to groundwater under various land use scenarios. Model input parameters were then systematically adjusted to assess model sensitivity to changes in key variables and evaluate uncertainty in the model results relative to the development of the SSL. It should be noted that the perchlorate SSL developed in this report is intended to be used as a preliminary soil screening level to guide characterization and remediation planning activities relative to the protection of groundwater. The perchlorate SSL is not intended to be used a remediation or cleanup goal for impacted soils because remediation or cleanup goals need to consider other factors such as existing land use, future land use, effectiveness, implementability, and cost.

The approach for the development of the SSL presented in this report focuses on the development of appropriate screening levels for residual perchlorate in the upper 20 feet of the vadose zone that are protective of underlying groundwater. The development of the SSL for only upper 20 feet of vadose zone is considered appropriate because: 1) the highest concentrations of residual perchlorate are observed in the upper 20 feet of the vadose zone within the Study Area, and 2) 20 feet is considered the maximum practical depth for the remediation of soils containing perchlorate through excavation and disposal or ex-situ treatment (Alternatives C and D in the RAP). As stated in prior correspondence with the LARWQCB including a technical meeting with the LARWQCB on June 5, 2003, no practical removal or treatment alternative exists for the deeper zone of perchlorate contamination within the AISA. In addition, the injection of fluids necessary for alternative treatment technologies poses an increased threat to groundwater quality due to the high probability of flushing perchlorate to underlying groundwater. At the time the RAP was prepared, as well as today, Aerojet is unaware of other technically viable alternatives for dealing with low concentrations of perchlorate in the vadose zone at depth.

As described in the 2nd Addendum to the RAP, the maintenance of a relatively impermeable cap over areas of residual perchlorate, combined with other institutional controls, is the most appropriate means of eliminating potential threats to human health and groundwater associated with the occurrence of perchlorate in the vadose zone within the AISA. As demonstrated in the RAP, the installation of a relatively impermeable cap eliminates the need to apply a SSL because the soils containing perchlorate would be left in place and functionally isolated from both human exposure and groundwater. However to further demonstrate the effectiveness of the impermeable capping alternative, it is included with the evaluation of other land use scenarios in the development of a SSL described below. The following sections of this report describe the conceptual model of perchlorate migration in the vadose zone within the Study Area and the numerical modeling of potential perchlorate impacts to groundwater for the selection of a perchlorate SSL for the upper 20 feet of vadose zone within the Study Area.

6.1 CONCEPTUAL MODEL OF PERCHLORATE MIGRATION IN THE VADOSE ZONE

The conceptual model of perchlorate migration in the vadose zone described in this section is based on soil physical property measurements, perchlorate soil sampling results, lithologic logging, and other field observations made over the last 13 years of site characterization activities within the AISA. Ammonium perchlorate and potassium perchlorate are solid non-volatile compounds that combine the perchlorate anion (ClO_4^-) with cations, typically either ammonium (NH_4^+) or potassium (K^+) cations. When either of these salts is dissolved in water the cations and anions are released and become hydrolyzed. Perchlorate salts, including ammonium and potassium perchlorate, are very soluble. For example, ammonium perchlorate has a water solubility of 106 grams/liter (g/l) and potassium perchlorate 7.5 g/l at 0°C, and the solubility increases rapidly with temperature. As long as there is enough water to dissolve the perchlorate salts, perchlorate will be mobile in the free anion form and is very stable.

Due to the non-volatile and high solubility of perchlorate salts, the amount of water present in unsaturated soils and its movement as liquid soil moisture (pore water) is fundamental to the understanding of perchlorate migration in the vadose zone. Pore water in vadose zone sediments moves downward in a response to a total head gradient. The total head gradient consists of the pressure head (capillary pressure) and the elevation head (gravitational forces). Capillary pressures are negative pressures that work against gravitational forces to hold pore water by capillary tension in the soil pore space. Consequently, soil moisture (pore water) only moves downward when the elevation head (gravitational forces) exceed the pressure head (capillary pressure). This typically occurs when infiltration of water increases the soil moisture content to a level where the downward gravitational forces exceed and overcome the capillary

tension. Consequently, measurements of soil moisture content are important in understanding the potential for downward pore water movement in the vadose zone.

Laboratory testing for physical soil properties (including bulk density, porosity, moisture content, and organic carbon content) was conducted on soil samples collected from the upper 100 feet of vadose zone during the Phase I and II Emerging Chemicals Investigations in the AISA described in Section 3.0 above. These physical soil testing results are summarized in Table 6-1. Lithologic descriptions for these samples based on grain-size distribution testing ranged from medium sand to gravel consistent with most samples defined as coarse sand. These lithologic descriptions are consistent with lithologic logging of numerous boreholes at within the AISA. Laboratory testing results indicated soil moisture contents ranging from less than 2 percent to a maximum of about 13 percent (by volume) in one sample. The average soil moisture content was less than 5 percent (by volume). These relatively low soil moisture contents are typical of published literature values for medium sand, coarse sand, and gravel sediments in arid environments (e.g., limited precipitation and deep percolation). The relatively low soil moisture contents observed within the upper 100 feet of the vadose zone at the AISA suggest that the vadose zone is receiving very limited amounts, if any, of infiltration from precipitation or other sources. This observation is consistent with the majority of the AISA being covered by buildings or pavement materials.

Another important consideration in understanding the migration of perchlorate in the vadose zone is the vertical distribution of perchlorate as observed in soil sampling results. As described above, the migration of perchlorate is completely dependant on the movement of pore water through the vadose zone. Consequently, the occurrence of perchlorate in soil samples collected at various depths can be used as an indicator or tracer of pore water movement. For example, if pore water was moving readily downward through soils containing residual perchlorate, it would be expected that perchlorate would be found throughout the entire thickness of the vadose zone to the underlying groundwater. As described in Section 5.4, soil sampling results in the Study Area indicated that the majority of the perchlorate is limited to the upper 20 feet of the vadose zone. This indicates that the existing buildings and pavement materials are effectively restricting infiltration and limiting the downward migration of perchlorate over the majority of the Study Area. Perchlorate is observed to depths as great as 90 to 100 feet bgs in two localized areas within the Study Area indicating that localized infiltration and downward pore water movement may have occurred in these areas in the past. This localized infiltration may be the result of past operational practices that involved discharge of water to ground surface or the ponding and infiltration of precipitation and surface water

runoff in these areas prior to the placement of the asphaltic concrete pavement that that covers the site currently.

6.2 NUMERICAL MODELING OF POTENTIAL IMPACTS TO GROUNDWATER

This section presents the numerical modeling of potential impacts of residual perchlorate in the upper 20 feet of the vadose zone on underlying groundwater quality. Potential migration of residual perchlorate concentrations in the upper 20 feet of the vadose zone were simulated using a variably-saturated flow and solute transport model, VS2DT, developed by the United States Geological Survey (Lappala, et al., 1983 and Healy, 1990). The VS2DT model is an improvement over the EPA VLEACH model used for the previous assessment of groundwater impacts provided in the RAP (Geomatrix, 2002). This improvement relates to the ability of VS2DT model to simulate both water flow and perchlorate transport in both the vadose zone and underlying groundwater. As a result, the VS2DT model is capable of explicitly simulating perchlorate migration within the vadose zone and the underlying groundwater aquifer as a coupled system thus allowing for the direct prediction of perchlorate groundwater concentrations at a Point of Compliance (POC) located at the site boundary.

6.2.1 VS2DT Model Construction

The VS2DT model constructed for the development of the perchlorate SSL consists of a two-dimensional model domain oriented in cross section along a groundwater flow extending through the Study Area. VS2DT utilizes finite difference numerical methods to solve the Richard's equation for variably-saturated flow and the advection-dispersion equation for solute transport. The cross sectional model domain is discretized into 60 rows and 90 columns comprising a grid of 5,400 cells extending from groundwater surface to approximately 50 feet below the water table (Figure 6-1). For the purposes of this model, the depth to the water table was assumed to be fixed at an approximate depth of 250 feet below ground surface with a uniform hydraulic gradient of 0.0027 feet per foot across the saturated portion of the model domain to allow simulation of groundwater flow.

6.2.2 Model Input Parameters

Input parameters to the VS2DT model are based on site-specific data collected during various characterization activities conducted within the AISA and the Baldwin Park Operable Unit over the past 13 years. A summary of model input parameters are provided in Table 6-2. Model input parameters representing soil properties for the vadose zone were primarily based on physical laboratory test results from soil samples collected during the Phase I and II Emerging Chemicals Investigations as described in Section 6.1 and presented on Table 6-1. These

physical soil properties data were used to generate site-specific van Genuchten equation parameters that define the relationship between moisture content, capillary pressure, and unsaturated hydraulic conductivity (i.e., soil characteristic functions) in unsaturated sediments in the VS2DT model. Initial moisture content conditions were assigned based on the average moisture content (approximately 5 percent by volume) observed within the AISA (Table 6-1). Estimates of saturated hydraulic conductivity are generally based on long-term aquifer testing results of large-capacity extraction wells in the Baldwin Park Operable Unit. Estimates of infiltration and deep percolation through the vadose zone (groundwater recharge) are based on regional studies conducted by the San Gabriel Basin (CDWR, 1966) and groundwater modeling studies in the San Gabriel Basin (Geomatrix, 2005c). Other model input parameters such as longitudinal and transverse dispersivity are based on published literature values.

Two source areas were defined in the VS2DT model to represent residual perchlorate sources in the vadose zone associated with the Former Grinding Station 6 and the Former Mixing Stations 8 and 9 to a depth of 20 feet. The upgradient source area representing Former Grinding Station 6 was assigned a source length of 100 feet whereas the downgradient source area representing Former Mixing Stations 8 and 9 was assigned a source length of 180 feet. These source lengths are based on the approximate length of the area of elevated perchlorate concentrations observed along a groundwater flow path, extending from northeast to the southwest through the Study Area. Sources were not assigned a width dimension in the model because the model is of a unit thickness given its two-dimensional cross sectional construct. Source areas were assigned an arbitrary relative perchlorate concentration in water to allow prediction of relative concentrations at the POC located at the site boundary (Figure 6-1).

6.2.3 Predicted Impacts to Groundwater

The VS2DT model was utilized to simulate potential impacts to groundwater from residual perchlorate concentrations for the following two future land use scenarios. These future land use scenarios are consistent with those evaluated in the RAP using the VLEACH model.

- No infiltration – In this future land use scenario, residual perchlorate concentrations in soil are covered and remain covered by impermeable pavement. As a result, no infiltration or downward percolation of water occurs through the residual perchlorate concentrations in soil.
- Infiltration of precipitation – In this future land use scenario, residual perchlorate concentrations in soil are exposed to naturally occurring precipitation and infiltration (pavement is removed with the ground surface exposed). Approximately 15 percent (3 inches per year) of the annual average precipitation (20 inches per

year) is allowed to infiltrate and percolate downward through the vadose zone. This estimated infiltration rate is based on groundwater modeling studies in the San Gabriel Basin that consider precipitation rates, surface runoff, and evapotranspiration rates. Infiltrating precipitation percolates downward through the residual perchlorate concentrations resulting in leaching and migration of perchlorate towards the water table.

Following the simulation of each of the future land use scenarios described above, using relative source concentrations as described in Section 5.2, the resultant predicted concentrations were used to estimate the soil concentration for perchlorate in the upper 20 feet of the vadose zone that would be equivalent to a groundwater concentration of 6 $\mu\text{g/l}$ at the POC located at the site boundary as described in Section 6.2.2. The 6 $\mu\text{g/l}$ threshold concentration for this evaluation is based on the State of California Public Health Goal for perchlorate in drinking water.

Predicted perchlorate concentrations in groundwater at the POC located at the site boundary are shown on Figures 6-2 and 6-3 for each of two land use scenarios described above. The soil concentration for perchlorate that is equivalent to a groundwater perchlorate concentration of 6 $\mu\text{g/l}$ at the site boundary is also shown on these figures. For the no infiltration land use scenario, the simulated perchlorate concentrations were effectively zero for the entire duration of the simulation and therefore no predicted perchlorate concentrations are shown on Figure 6-2. This result is consistent with the concentrations previously predicted using the VLEACH model in the RAP (Geomatrix 2002a). Simulated perchlorate concentrations for the infiltration of precipitation scenario shown on Figure 6-3 indicate that the peak concentrations are predicted to occur at the POC located at the site boundary after approximately 80 years. This demonstrates the very slow migration of perchlorate through the vadose zone under conditions consistent with the infiltration of normal precipitation.

6.2.4 Model Sensitivity and Uncertainty Analyses

The sensitivity of the VS2DT modeling results was evaluated by systematically adjusting various input parameters from the base case model input parameters listed in Table 6-2, to assess the change in soil perchlorate concentrations in the upper 20 feet of the vadose zone that would be equivalent to a groundwater concentration of 6 $\mu\text{g/l}$ at the site boundary. The base case model input parameters presented in Table 6-2 are generally based on average or median values within a range of measured values. Consequently, the base case input parameters are considered to be the most representative of the site conditions being simulated. Sensitivity analyses typically adjust various input parameters from the base case parameters within the

range of measured or reported values for the various input parameters. This approach not only allows for the assessment of the sensitivity of the model to changes in input parameters but also allows for an assessment of the effect that parameter uncertainties have on model results.

A tabulation of the various sensitivity simulations conducted for the VS2DT model described above is provided in Table 6-3. Sensitivity simulations were performed using the base case input parameters presented in Table 6-2 and infiltration rates associated with the infiltration of precipitation land use scenario described above. As stated above, adjustments to the various input parameters reflect uncertainties in the measured or reported values for the various model input parameters. Based on this evaluation, it was determined the VS2DT model is most sensitive to changes in saturated hydraulic conductivity, porosity, and infiltration rates. Conversely, the model was determined to be least sensitive to changes in residual moisture content, initial moisture content, and changes in longitudinal and transverse dispersivity values. The results of various model sensitivity simulations indicated that adjustments to the various input parameters over the range of measured or expected values resulted in simulated soil perchlorate concentrations ranging from 1,000 to 1,641 $\mu\text{g/kg}$ in the upper 20 feet of the vadose zone that were equivalent to 6 $\mu\text{g/l}$ in groundwater at the site boundary. By comparison, soil perchlorate concentrations of 1,302 $\mu\text{g/kg}$ were predicted using the base case model input parameters. Consequently, the range of predicted soil concentrations of 1,000 to 1,641 $\mu\text{g/kg}$ demonstrates the variability in model results associated with the uncertainties in measured or reported values for the various model input parameters.

6.2.5 Proposed SSL for Perchlorate

The approach for the development of the SSL presented in this report focuses on the development of appropriate screening level for residual perchlorate in the upper 20 feet of the vadose zone that is protective of groundwater. Development of the SSL for only the upper 20 feet of vadose zone is considered appropriate because: 1) the highest concentrations of residual perchlorate are observed in the upper 20 feet of the vadose zone within the Study Area, 2) most of the residual perchlorate mass resides in the upper 20 feet of the vadose zone, and 3) 20 feet is considered the maximum practical depth for the remediation of soils containing perchlorate through excavation and ex-situ treatment. As stated in Section 6.0, no practical removal or treatment alternative exists for the deeper areas of perchlorate contamination within the AISA.

As demonstrated by the VS2DT modeling in this report and previous modeling efforts presented in the RAP, the installation of a relatively impermeable cap eliminates the need to apply a SSL because the soils containing residual perchlorate would be left in place and

functionally isolated from both human exposure and groundwater. However to evaluate other potential land use scenarios where existing buildings and pavement may be removed, VS2DT simulations were performed to assess potential impacts to groundwater associated with perchlorate in the upper 20 feet of the vadose zone. These simulations indicated that perchlorate concentrations below about 1,300 $\mu\text{g/kg}$ in the upper 20 feet of the vadose zone pose no threat to groundwater quality at the site boundary under a future land use that allows infiltration of naturally occurring rainfall. In consideration of these results and uncertainties in model input parameters described in Section 6.2.4, it is proposed that a SSL of 1,000 $\mu\text{g/kg}$ be adopted for the upper 20 feet of the vadose zone assuming land use restrictions that preclude landscape irrigation. Given that it has been demonstrated in this report that a perchlorate concentration of 1,300 $\mu\text{g/kg}$ in the upper 20 feet of the vadose zone poses no threat to groundwater quality at the site boundary, a SSL of 1,000 $\mu\text{g/kg}$ provides an adequate safety factor to address uncertainties associated with model predictions and future land use.

7.0 CONCLUSIONS AND RECOMMENDATIONS

This report presents the findings of the further assessment of soils, in the Study Area, containing residual concentrations of perchlorate. This report also presents the development of a perchlorate SSL for the shallow vadose zone (upper 20 feet) that is protective of underlying groundwater. Conclusions regarding the further assessment of soils are as follows:

- The lateral extent of perchlorate in the Study Area has been characterized to concentrations of 40 $\mu\text{g/kg}$ or less. There are two minor exceptions where concentrations above 40 $\mu\text{g/kg}$ have not been completely bounded: 1) the area north of the northwestern corner of Building 3; and 2) the area south of Building 4.
- The vertical extent of perchlorate in the Study Area has been characterized to concentrations of 40 $\mu\text{g/kg}$ or less and depths of less than 20 feet. There are two minor exceptions; 1) the area near the northeast corner of Building 2, and 2) the area south of Building 4.
- Five areas of highest perchlorate concentrations ("hot spots") were observed in the upper 20 feet in the Study Area. These "hot spots" are located near: 1) the northeast corner of Building 2; 2) the northeast corner of Building 4; 3) a very localized area near the northwest corner of Building 4; 4) a localized area southwest of the southwest corner of Building 4; and 5) a localized area south of the southern wall of Building 4. These "hot spot" locations are generally consistent with the current understanding of the former locations of Former Grinding Station 6, Former Mixing Station 8, and Former Mixing Station 9.

Conclusions and recommendations regarding the development of a SSL for perchlorate are follows:

- As demonstrated by analyses presented in this report and previous analyses presented in the RAP, the installation and maintenance of a relatively impermeable cap eliminates the need to apply a SSL, because soils containing residual perchlorate would be left in place, but functionally isolated from both human exposure and groundwater. Consequently, capping with institutional controls remains the most effective, implementable, and economical remedy for soils containing residual concentrations of perchlorate. This conclusion is consistent with the RAP, RAP addenda, and subsequent correspondence with the LARWQCB. As a result, capping with institutional controls remains the recommended remedial alternative for soils containing residual perchlorate in the Study Area.
- The development of the SSL for the upper 20 feet of vadose zone is considered appropriate because: 1) the highest concentrations of residual perchlorate are observed in the upper 20 feet of the vadose zone within the Study Area, 2) most of the mass of perchlorate remaining in soil is contained in the upper 20 feet, and 3) 20 feet would essentially be considered the maximum practical depth for remediation of soils containing perchlorate through excavation and ex-situ treatment. No practical removal or treatment alternative exists for the deeper areas of perchlorate contamination within the AISA.
- Given that it has been demonstrated in this report that a perchlorate concentration of 1,300 $\mu\text{g/kg}$ in the upper 20 feet of the vadose zone poses no threat to groundwater quality at the site boundary, a SSL of 1,000 $\mu\text{g/kg}$ provides an adequate margin of safety to address uncertainties associated with model predictions and future land use restrictions. Consequently, it is recommended that a perchlorate SSL of 1,000 $\mu\text{g/kg}$ be adopted for the upper 20 feet of soils containing residual concentrations of perchlorate.
- The SSL for perchlorate in the shallow vadose zone developed in this report is intended to be used as a preliminary soil screening level, to guide characterization and remediation planning activities relative to the protection of groundwater. The perchlorate SSL is not intended to be used directly as a remediation or cleanup goal for soils containing residual concentrations of perchlorate because remediation or cleanup goals need to consider other factors such as existing land use, future land use, effectiveness, implementability, and cost.

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TABLES

TABLE 5-1

SUMMARY OF ANALYTICAL RESULTS FOR PERCHLORATE IN SOIL SAMPLES

AZUSA / IRWINDALE STUDY AREA

Azusa and Irwindale, California

Results reported in micrograms per kilogram (mg/kg)

Boring ID	Sample Date	Sample Depth (feet bgs)	EPA Method 314.0 MOD
			Perchlorate
PIZB-01	2/27/2006	35	940
PIZB-01	2/27/2006	40	2100
PIZB-01	2/27/2006	45	1700
PIZB-01	2/27/2006	50	970
PIZB-01	2/27/2006	60	880
PIZB-01	2/27/2006	70	710
PIZB-01	2/27/2006	80	1300
PIZB-01	2/27/2006	90	990
PIZB-01	2/27/2006	100	880
PIZB-02	2/28/2006	35	42
PIZB-02	2/28/2006	40	87
PIZB-02	2/28/2006	45	41
PIZB-02	2/28/2006	50	100
PIZB-02	2/28/2006	60	280
PIZB-02	2/28/2006	70	ND (<40) ²
PIZB-02	2/28/2006	80	88
PIZB-02	2/28/2006	90	ND (<40) ²
PIZB-02	2/28/2006	100	55
PIZB-03	3/1/06	35	140
PIZB-03	3/1/06	40	ND (<40)
PIZB-03	3/1/06	45	98
PIZB-03	3/1/06	50	98
PIZB-03	3/1/06	60	79
PIZB-03	3/1/06	70	64
PIZB-03	3/1/06	80	73
PIZB-03	3/1/06	90	ND (<40)
PIZB-03	3/1/06	100	ND (<40)
PIZB-04	2/7/06	1	ND (<40)
PIZB-04	2/7/06	2.5	ND (<40)
PIZB-04	2/7/06	5	44
PIZB-04	2/7/06	7.5	ND (<40)
PIZB-04	2/7/06	10	ND (<40)
PIZB-04	2/7/06	15	ND (<40)
PIZB-04	2/7/06	20	ND (<40)
PIZB-04	2/7/06	25	72
PIZB-04	2/7/06	30	250
PIZB-04	2/7/06	35	150
PIZB-04	2/7/06	40	76
PIZB-04	2/7/06	45	190
PIZB-04	2/7/06	50	220
PIZB-04A	3/1/06	60	120
PIZB-04A	3/1/06	70	110

TABLE 5-1
SUMMARY OF ANALYTICAL RESULTS FOR PERCHLORATE IN SOIL SAMPLES

AZUSA / IRWINDALE STUDY AREA

Azusa and Irwindale, California

Results reported in micrograms per kilogram (µg/kg)

Boring ID	Sample Date	Sample Depth (feet bgs)	EPA Method 314.0 MOD
			Perchlorate
PIZB-01	2/27/2006	35	940
PIZB-01	2/27/2006	40	2100
PIZB-01	2/27/2006	45	1700
PIZB-01	2/27/2006	50	970
PIZB-01	2/27/2006	60	880
PIZB-01	2/27/2006	70	710
PIZB-01	2/27/2006	80	1300
PIZB-01	2/27/2006	90	990
PIZB-01	2/27/2006	100	880
PIZB-02	2/28/2006	35	42
PIZB-02	2/28/2006	40	87
PIZB-02	2/28/2006	45	41
PIZB-02	2/28/2006	50	100
PIZB-02	2/28/2006	60	280
PIZB-02	2/28/2006	70	ND (<40) ²
PIZB-02	2/28/2006	80	88
PIZB-02	2/28/2006	90	ND (<40) ²
PIZB-02	2/28/2006	100	55
PIZB-03	3/1/06	35	140
PIZB-03	3/1/06	40	ND (<40)
PIZB-03	3/1/06	45	98
PIZB-03	3/1/06	50	98
PIZB-03	3/1/06	60	79
PIZB-03	3/1/06	70	64
PIZB-03	3/1/06	80	73
PIZB-03	3/1/06	90	ND (<40)
PIZB-03	3/1/06	100	ND (<40)
PIZB-04	2/7/06	1	ND (<40)
PIZB-04	2/7/06	2.5	ND (<40)
PIZB-04	2/7/06	5	44
PIZB-04	2/7/06	7.5	ND (<40)
PIZB-04	2/7/06	10	ND (<40)
PIZB-04	2/7/06	15	ND (<40)
PIZB-04	2/7/06	20	ND (<40)
PIZB-04	2/7/06	25	72
PIZB-04	2/7/06	30	250
PIZB-04	2/7/06	35	150
PIZB-04	2/7/06	40	76
PIZB-04	2/7/06	45	190
PIZB-04	2/7/06	50	220
PIZB-04A	3/1/06	60	120
PIZB-04A	3/1/06	70	110

TABLE 5-1
SUMMARY OF ANALYTICAL RESULTS FOR PERCHLORATE IN SOIL SAMPLES

Results reported in micrograms per kilogram ($\mu\text{g/kg}$)

Boring ID	Sample Date	Sample Depth (feet bgs)	EPA Method 314.0 MOD
			Perchlorate
PIZB-04A	3/1/06	80	100
PIZB-04A	3/1/06	90	58
PIZB-04A	3/1/06	100	ND (<40)
PIZB-05	2/22/06	1	290
PIZB-05	2/22/06	2.5	320
PIZB-05	2/22/06	5	83
PIZB-05	2/24/06	7.5	60
PIZB-05	2/24/06	10	65
PIZB-05	2/24/06	15	ND (<40)
PIZB-05	2/24/06	20	65
PIZB-05	2/24/06	25	120
PIZB-05	2/24/06	30	75
PIZB-05	2/24/06	35	64
PIZB-05	2/24/06	40	ND (<40)
PIZB-05	2/24/06	45	ND (<40)
PIZB-05	2/24/06	50	ND (<40)
PIZB-05	2/24/06	60	ND (<40)
PIZB-05	2/24/06	70	ND (<40)
PIZB-05	2/24/06	80	ND (<40)
PIZB-05	2/24/06	90	ND (<40)
PIZB-05	2/24/06	100	ND (<40)
PIZB-06	2/22/06	1	420
PIZB-06	2/22/06	2.5	1,200
PIZB-06	2/22/06	5	300
PIZB-06	2/22/06	7.5	40
PIZB-06	2/22/06	10	ND (<40)
PIZB-06	2/22/06	15	ND (<40)
PIZB-06	2/22/06	20	ND (<40)
PIZB-06	2/22/06	25	ND (<40)
PIZB-06	2/22/06	30	ND (<40)
PIZB-06	2/22/06	35	ND (<40)
PIZB-06	2/22/06	40	ND (<40)
PIZB-06	2/22/06	45	ND (<40)
PIZB-06	2/22/06	50	ND (<40)
PIZB-06	2/23/06	60	ND (<40)
PIZB-06	2/23/06	70	ND (<40)
PIZB-06	2/23/06	80	ND (<40)
PIZB-06	2/23/06	90	ND (<40)
PIZB-06	2/23/06	100	ND (<40)
PSZB-05	3/16/2001	10	ND (<40)
PSZB-05	3/16/2001	20	ND (<40)
PSZB-05	3/16/2001	30	ND (<40)
PSZB-05 ¹	3/16/2001	5	ND (<40) ²
PSZB-06	3/16/2001	5	3,000
PSZB-06	3/16/2001	10	120
PSZB-06	3/16/2001	20	ND (<40)

TABLE 5-1
SUMMARY OF ANALYTICAL RESULTS FOR PERCHLORATE IN SOIL SAMPLES

Results reported in micrograms per kilogram (µg/kg)

Boring ID	Sample Date	Sample Depth (feet bgs)	EPA Method 314.0 MOD
			Perchlorate
PSZB-06	3/16/2001	30	ND (<40)
PSZB-9	3/9/01	5	ND (<40)
PSZB-9	3/9/01	10	ND (<40)
PSZB-9	3/9/01	20	ND (<40)
PSZB-9	3/9/01	27	ND (<40)
PSZB-10	3/9/01	5	1,400
PSZB-10	3/9/01	10	100
PSZB-10	3/9/01	20	ND (<40)
PSZB-10	3/9/01	27	ND (<40)
PSZB-11	3/17/01	5	180
PSZB-11	3/17/01	10	ND (<40)
PSZB-11	3/17/01	20	ND (<40)
PSZB-11	3/17/01	30	ND (<40)
PSZB-12	3/9/01	5	100
PSZB-12	3/9/01	10	ND (<40)
PSZB-12	3/9/01	20	ND (<40)
PSZB-12	3/9/01	30	ND (<40)
PSZB-19	3/8/01	5	ND (<40)
PSZB-19	3/8/01	10	ND (<40)
PSZB-19	3/8/01	20	ND (<40)
PSZB-19	3/8/01	27	ND (<40)
PSZB-20	3/9/01	5	ND (<40)
PSZB-20	3/9/01	10	ND (<40)
PSZB-20	3/9/01	20	ND (<40)
PSZB-20	3/9/01	27	ND (<40)
PSZB-21	3/21/05	1	ND (<40)
PSZB-21	3/21/05	2.5	ND (<40)
PSZB-21	3/21/05	5	ND (<40)
PSZB-21	3/21/05	7.5	ND (<40)
PSZB-21	3/21/05	10	ND (<40)
PSZB-21	3/21/05	15	ND (<40)
PSZB-21	3/21/05	20	ND (<40)
PSZB-21	3/21/05	25	ND (<40)
PSZB-21	3/21/05	30	ND (<40)
PSZB-22	3/21/05	1	ND (<40)
PSZB-22	3/21/05	2.5	ND (<40)
PSZB-22	3/21/05	5	ND (<40)
PSZB-22	3/21/05	7.5	ND (<40)
PSZB-22	3/21/05	10	ND (<40)
PSZB-22	3/21/05	15	ND (<40)
PSZB-22	3/21/05	20	ND (<40)
PSZB-22	3/21/05	25	ND (<40)
PSZB-22	3/21/05	30	ND (<40)
PSZB-23	3/21/05	1	ND (<40)
PSZB-23	3/21/05	2.5	420
PSZB-23	3/21/05	5	52,000

TABLE 5-1
SUMMARY OF ANALYTICAL RESULTS FOR PERCHLORATE IN SOIL SAMPLES

Results reported in micrograms per kilogram ($\mu\text{g/kg}$)

Boring ID	Sample Date	Sample Depth (feet bgs)	EPA Method 314.0 MOD
			Perchlorate
PSZB-23	3/21/05	7.5	66,000
PSZB-23	3/21/05	10	--
PSZB-23	3/21/05	15	1,600
PSZB-23	3/21/05	20	580
PSZB-23	3/21/05	25	1,400
PSZB-23	3/21/05	30	--
PSZB-24	3/22/05	1	ND (<40)
PSZB-24	3/22/05	2.5	86
PSZB-24	3/22/05	5	14,000
PSZB-24	3/22/05	10	ND (<40)
PSZB-24	3/22/05	15	43
PSZB-24	3/22/05	20	ND (<40)
PSZB-24	3/22/05	25	120
PSZB-24	3/22/05	30	120
PSZB-25	3/29/05	1	ND (<40)
PSZB-25	3/29/05	2.5	48
PSZB-25	3/29/05	5	ND (<40)
PSZB-25	3/29/05	7.5	ND (<40)
PSZB-25	3/29/05	10	ND (<40)
PSZB-25	3/29/05	15	ND (<40)
PSZB-25	3/29/05	20	ND (<40)
PSZB-25	3/29/05	25	ND (<40)
PSZB-25	3/29/05	30	ND (<40)
PSZB-26	3/30/05	1	ND (<40)
PSZB-26	3/30/05	2.5	86
PSZB-26	3/30/05	5	ND (<40)
PSZB-26	3/30/05	7.5	50
PSZB-26	3/30/05	10	ND (<40)
PSZB-26	3/30/05	15	ND (<40)
PSZB-26	3/30/05	20	ND (<40)
PSZB-26	3/30/05	25	ND (<40)
PSZB-26	3/30/05	30	ND (<40)
PSZB-27	3/23/05	1	730
PSZB-27	3/23/05	2.5	2,300
PSZB-27	3/23/05	5	ND (<40)
PSZB-27	3/23/05	7.5	ND (<40)
PSZB-27	3/23/05	10	ND (<40)
PSZB-27	3/23/05	15	ND (<40)
PSZB-27	3/23/05	20	ND (<40)
PSZB-27A	3/24/05	25	ND (<40)
PSZB-27A	3/24/05	30	ND (<40)
PSZB-28	3/24/05	1	ND (<40)
PSZB-28	3/24/05	2.5	ND (<40)
PSZB-28	3/24/05	5	ND (<40)
PSZB-28	3/24/05	7.5	--
PSZB-28	3/24/05	10	ND (<40)

TABLE 5-1
SUMMARY OF ANALYTICAL RESULTS FOR PERCHLORATE IN SOIL SAMPLES

Results reported in micrograms per kilogram (µg/kg)

Boring ID	Sample Date	Sample Depth (feet bgs)	EPA Method 314.0 MOD
			Perchlorate
PSZB-28	3/24/05	15	ND (<40)
PSZB-28	3/24/05	20	ND (<40)
PSZB-28	3/24/05	25	ND (<40)
PSZB-28	3/24/05	30	ND (<40)
PSZB-29	3/24/05	1	ND (<40)
PSZB-29	3/24/05	2.5	86,000
PSZB-29	3/24/05	5	460
PSZB-29	3/24/05	7.5	310
PSZB-29	3/24/05	10	180
PSZB-29	3/24/05	15	57
PSZB-29	3/24/05	20	58
PSZB-29	3/24/05	25	ND (<40)
PSZB-29	3/24/05	30	ND (<40)
PSZB-30	3/24/05	1	ND (<40)
PSZB-30	3/24/05	2.5	ND (<40)
PSZB-30	3/24/05	5	ND (<40)
PSZB-30	3/24/05	7.5	ND (<40)
PSZB-30	3/24/05	10	ND (<40)
PSZB-30	3/24/05	15	ND (<40)
PSZB-30	3/24/05	20	ND (<40)
PSZB-30	3/24/05	25	ND (<40)
PSZB-30	3/24/05	30	78
PSZB-31	3/25/05	1	ND (<40)
PSZB-31	3/25/05	2.5	61
PSZB-31	3/25/05	5	41
PSZB-31	3/25/05	7.5	ND (<40)
PSZB-31	3/25/05	10	ND (<40)
PSZB-31	3/25/05	15	290
PSZB-31	3/25/05	20	210
PSZB-31	3/25/05	25	450
PSZB-31	3/25/05	30	470
PSZB-32	3/25/05	1	ND (<40)
PSZB-32	3/25/05	2.5	760
PSZB-32	3/25/05	5	940
PSZB-32	3/25/05	7.5	75,000
PSZB-32	3/25/05	10	17,000
PSZB-32	3/25/05	15	51
PSZB-32	3/25/05	20	130
PSZB-32	3/25/05	25	70
PSZB-32	3/25/05	30	ND (<40)
PSZB-33	3/25/05	1	ND (<40)
PSZB-33	3/25/05	2.5	ND (<40)
PSZB-33	3/25/05	5	ND (<40)
PSZB-33	3/25/05	7.5	130
PSZB-33	3/25/05	10	91
PSZB-33	3/25/05	15	53

TABLE 5-1
SUMMARY OF ANALYTICAL RESULTS FOR PERCHLORATE IN SOIL SAMPLES

Results reported in micrograms per kilogram (µg/kg)

Boring ID	Sample Date	Sample Depth (feet bgs)	EPA Method 314.0 MOD
			Perchlorate
PSZB-33	3/25/05	20	92
PSZB-33	3/25/05	25	100
PSZB-33	3/25/05	30	49
PSZB-34	3/28/05	1	ND (<40)
PSZB-34	3/28/05	2.5	1,600
PSZB-34	3/28/05	5	86
PSZB-34	3/28/05	7.5	56
PSZB-34	3/28/05	10	47
PSZB-34	3/28/05	15	120
PSZB-34	3/28/05	20	64
PSZB-34	3/28/05	25	46
PSZB-34	3/28/05	30	45
PSZB-35	3/28/05	1	ND (<40)
PSZB-35	3/28/05	2.5	ND (<40)
PSZB-35	3/28/05	5	ND (<40)
PSZB-35	3/28/05	7.5	ND (<40)
PSZB-35	3/28/05	10	ND (<40)
PSZB-35	3/28/05	15	ND (<40)
PSZB-35	3/28/05	20	ND (<40)
PSZB-35	3/28/05	25	ND (<40)
PSZB-35	3/28/05	30	ND (<40)
PSZB-36	3/29/05	1	510
PSZB-36	3/29/05	1.5	38,000
PSZB-36	3/29/05	5	280
PSZB-36	3/29/05	7.5	2,100
PSZB-36	3/29/05	10	ND (<40)
PSZB-36	3/29/05	15	ND (<40)
PSZB-36	3/29/05	20	ND (<40)
PSZB-36	3/29/05	25	ND (<40)
PSZB-36	3/29/05	30	ND (<40)
PSZB-37	3/29/05	1	ND (<40)
PSZB-37	3/29/05	2.5	170
PSZB-37	3/29/05	5	44
PSZB-37	3/29/05	7.5	ND (<40)
PSZB-37	3/29/05	10	ND (<40)
PSZB-37	3/29/05	15	48
PSZB-37	3/29/05	20	ND (<40)
PSZB-37	3/29/05	25	ND (<40)
PSZB-37	3/29/05	30	ND (<40)
PSZB-38	3/29/05	1	ND (<40)
PSZB-38	3/29/05	2.5	93
PSZB-38	3/29/05	5	ND (<40)
PSZB-38	3/29/05	7.5	ND (<40)
PSZB-38	3/29/05	10	ND (<40)
PSZB-38	3/29/05	15	ND (<40)
PSZB-38	3/29/05	20	ND (<40)

TABLE 5-1
SUMMARY OF ANALYTICAL RESULTS FOR PERCHLORATE IN SOIL SAMPLES

Results reported in micrograms per kilogram ($\mu\text{g/kg}$)

Boring ID	Sample Date	Sample Depth (feet bgs)	EPA Method 314.0 MOD
			Perchlorate
PSZB-38	3/29/05	25	ND (<40)
PSZB-38	3/29/05	30	ND (<40)
PSZB-39	3/22/05	1.5	ND (<40)
PSZB-39	3/22/05	2.5	ND (<40)
PSZB-39	3/22/05	5	ND (<40)
PSZB-39	3/22/05	7.5	ND (<40)
PSZB-39	3/22/05	10	ND (<40)
PSZB-39	3/22/05	15	ND (<40)
PSZB-39	3/22/05	20	ND (<40)
PSZB-39	3/22/05	25	ND (<40)
PSZB-39	3/22/05	30	ND (<40)
PSZB-40	3/22/05	1	ND (<40)
PSZB-40	3/22/05	2.5	ND (<40)
PSZB-40	3/22/05	5	ND (<40)
PSZB-40	3/22/05	7.5	ND (<40)
PSZB-40	3/22/05	10	ND (<40)
PSZB-40	3/22/05	15	ND (<40)
PSZB-40	3/22/05	20	ND (<40)
PSZB-40	3/22/05	25	--
PSZB-40	3/22/05	30	ND (<40)
PSZB-41	4/1/05	1	ND (<40)
PSZB-41	4/1/05	2.5	ND (<40)
PSZB-41	4/1/05	5	ND (<40)
PSZB-41	4/1/05	7.5	ND (<40)
PSZB-41	4/1/05	10	ND (<40)
PSZB-41	4/1/05	15	ND (<40)
PSZB-41	4/1/05	20	ND (<40)
PSZB-41	4/1/05	25	ND (<40)
PSZB-41	4/1/05	30	ND (<40)
PSZB-42	3/30/05	1	990
PSZB-42	3/30/05	2.5	ND (<40)
PSZB-42	3/30/05	5	ND (<40)
PSZB-42	3/30/05	7.5	ND (<40)
PSZB-42	3/30/05	10	ND (<40)
PSZB-42	3/30/05	15	ND (<40)
PSZB-42	3/30/05	20	ND (<40)
PSZB-42	3/30/05	25	ND (<40)
PSZB-42	3/30/05	30	ND (<40)
PSZB-43	3/30/05	1	490
PSZB-43	3/30/05	2.5	140
PSZB-43	3/30/05	5	130
PSZB-43	3/30/05	7.5	ND (<40)
PSZB-43	3/30/05	10	58
PSZB-43	3/30/05	15	ND (<40)
PSZB-43	3/30/05	20	ND (<40)
PSZB-43	3/30/05	25	41

TABLE 5-1
SUMMARY OF ANALYTICAL RESULTS FOR PERCHLORATE IN SOIL SAMPLES

Results reported in micrograms per kilogram ($\mu\text{g/kg}$)

Boring ID	Sample Date	Sample Depth (feet bgs)	EPA Method 314.0 MOD
			Perchlorate
PSZB-43	3/30/05	30	40
PSZB-44	3/30/05	1	ND (<40)
PSZB-44	3/30/05	2.5	ND (<40)
PSZB-44	3/30/05	5	400
PSZB-44	3/30/05	7.5	130
PSZB-44	3/30/05	10	71
PSZB-44	3/30/05	15	52
PSZB-44	3/30/05	20	290
PSZB-44	3/30/05	25	390
PSZB-44	3/30/05	30	220
PSZB-45	2/8/06	1	ND (<40)
PSZB-45	2/8/06	2.5	ND (<40)
PSZB-45	2/8/06	6	ND (<40)
PSZB-45	2/8/06	7.5	ND (<40)
PSZB-45	2/8/06	10	ND (<40)
PSZB-45	2/8/06	15	ND (<40)
PSZB-45	2/8/06	20	ND (<40)
PSZB-45	2/8/06	25	ND (<40)
PSZB-45	2/8/06	30	ND (<40)
PSZB-45	2/8/06	35	ND (<40)
PSZB-45	2/8/06	40	ND (<40)
PSZB-46	3/30/05	1	ND (<40)
PSZB-46	3/30/05	2.5	ND (<40)
PSZB-46	3/30/05	5	730
PSZB-46	3/30/05	7.5	330
PSZB-46	3/30/05	10	470
PSZB-46	3/30/05	15	1,800
PSZB-46	3/30/05	20	3,700
PSZB-46	3/30/05	25	160
PSZB-46	3/30/05	30	50
PSZB-47	4/1/05	1	1,100
PSZB-47	4/1/05	2.5	1,800
PSZB-47	4/1/05	5	1,500
PSZB-47	4/1/05	7.5	260
PSZB-47	4/1/05	10	330
PSZB-47	4/1/05	15	180
PSZB-47	4/1/05	20	120
PSZB-47	4/1/05	25	430
PSZB-47	4/1/05	30	240
PSZB-48	3/2/06	1	ND (<40)
PSZB-48	3/2/06	2.5	ND (<40)
PSZB-48	3/2/06	5	ND (<40)
PSZB-48	3/2/06	7.5	ND (<40)
PSZB-48	3/2/06	10	ND (<40)
PSZB-48	3/2/06	15	ND (<40)
PSZB-48	3/2/06	20	ND (<40)

TABLE 5-1
SUMMARY OF ANALYTICAL RESULTS FOR PERCHLORATE IN SOIL SAMPLES

Results reported in micrograms per kilogram ($\mu\text{g/kg}$)

Boring ID	Sample Date	Sample Depth (feet bgs)	EPA Method 314.0 MOD
			Perchlorate
PSZB-48	3/2/06	25	93
PSZB-48	3/2/06	30	41
PSZB-48	3/2/06	35	ND (<40)
PSZB-48	3/2/06	40	ND (<40)
PSZB-49	3/30/05	1	71
PSZB-49	3/30/05	2.5	530
PSZB-49	3/30/05	5	16,000
PSZB-49	3/30/05	7.5	210
PSZB-49	3/30/05	10	110
PSZB-49	3/30/05	15	67
PSZB-49	3/30/05	20	ND (<40)
PSZB-49	3/30/05	25	ND (<40)
PSZB-49	3/30/05	30	ND (<40)
PSZB-49	3/30/05	35	NA
PSZB-49	3/30/05	40	NA
PSZB-50	2/8/2006	1	ND (<40)
PSZB-50	2/8/2006	2.5	ND (<40)
PSZB-50	2/8/2006	5	ND (<40)
PSZB-50	2/14/2006	7.5	ND (<40)
PSZB-50	2/14/2006	10	ND (<40)
PSZB-50	2/14/2006	15	ND (<40)
PSZB-50	2/14/2006	20	ND (<40)
PSZB-50	2/14/2006	25	ND (<40)
PSZB-50	2/14/2006	30	ND (<40)
PSZB-50	2/14/2006	35	ND (<40)
PSZB-50	2/14/2006	40	ND (<40)
PSZB-51	2/8/2006	1	ND (<40)
PSZB-51	2/8/2006	2.5	ND (<40)
PSZB-51	2/8/2006	5	ND (<40)
PSZB-51	2/14/2006	7.5	ND (<40)
PSZB-51	2/14/2006	10	ND (<40)
PSZB-51A	2/15/06	15	ND (<40)
PSZB-51A	2/15/06	20	ND (<40)
PSZB-51A	2/15/06	25	ND (<40)
PSZB-51A	2/15/06	30	ND (<40)
PSZB-51A	2/15/06	35	ND (<40)
PSZB-51A	2/15/06	40	ND (<40)
PSZB-52	3/2/2000	1	670
PSZB-52	3/2/2006	2.5	15,000
PSZB-52	3/2/2006	5	1,100
PSZB-52	3/2/2006	7.5	140
PSZB-52	3/2/2006	10	130
PSZB-52	3/2/2006	15	160
PSZB-52	3/2/2006	20	140
PSZB-52	3/2/2006	25	230
PSZB-52	3/2/2006	30	460

TABLE 5-1
SUMMARY OF ANALYTICAL RESULTS FOR PERCHLORATE IN SOIL SAMPLES

Results reported in micrograms per kilogram ($\mu\text{g/kg}$)

Boring ID	Sample Date	Sample Depth (feet bgs)	EPA Method 314.0 MOD
			Perchlorate
PSZB-52	3/2/2006	35	71
PSZB-52	3/2/2006	40	120
PSZB-53	2/21/2006	1	ND (<40)
PSZB-53	2/21/2006	2	ND (<40)
PSZB-53	2/21/2006	5	ND (<40)
PSZB-53	2/21/2006	7.5	ND (<40)
PSZB-53	2/21/2006	10	ND (<40)
PSZB-53A	2/22/2006	15	ND (<40)
PSZB-53A	2/22/2006	20	ND (<40)
PSZB-53A	2/22/2006	25	ND (<40)
PSZB-53A	2/22/2006	30	ND (<40)
PSZB-53A	2/22/2006	35	ND (<40)
PSZB-53A	2/22/2006	40	ND (<40)
PSZB-54	2/21/2006	1	ND (<40)
PSZB-54	2/21/2006	2	ND (<40)
PSZB-54	2/21/2006	5	ND (<40)
PSZB-54	2/21/2006	7.5	ND (<40)
PSZB-54	2/21/2006	10	ND (<40)
PSZB-54	2/21/2006	15	ND (<40)
PSZB-54	2/21/2006	20	ND (<40)
PSZB-54	2/21/2006	25	ND (<40)
PSZB-54	2/21/2006	30	ND (<40)
PSZB-54	2/21/2006	35	ND (<40)
PSZB-54	2/21/2006	40	ND (<40)
PSZB-55	2/9/2006	1	ND (<40)
PSZB-55	2/9/2006	2.5	ND (<40)
PSZB-55	2/9/2006	5	ND (<40)
PSZB-55	2/17/2006	7.5	ND (<40)
PSZB-55	2/17/2006	10	ND (<40)
PSZB-55	2/17/2006	15	ND (<40)
PSZB-55	2/17/2006	20	ND (<40)
PSZB-55	2/17/2006	25	ND (<40)
PSZB-55	2/17/2006	30	ND (<40)
PSZB-55	2/17/2006	35	ND (<40)
PSZB-55	2/17/2006	40	ND (<40)
PSZB-56	2/14/2006	1	ND (<40)
PSZB-56	2/14/2006	2.5	ND (<40)
PSZB-56	2/14/2006	5	ND (<40)
PSZB-56	2/15/06	7.5	ND (<40)
PSZB-56	2/15/06	10	ND (<40)
PSZB-56	2/15/06	15	ND (<40)
PSZB-56	2/15/06	20	ND (<40)
PSZB-56	2/15/06	25	ND (<40)
PSZB-56	2/15/06	30	ND (<40)
PSZB-56	2/15/06	35	ND (<40)
PSZB-56	2/15/06	40	ND (<40)

TABLE 5-1
SUMMARY OF ANALYTICAL RESULTS FOR PERCHLORATE IN SOIL SAMPLES

Results reported in micrograms per kilogram (µg/kg)

Boring ID	Sample Date	Sample Depth (feet bgs)	EPA Method 314.0 MOD
			Perchlorate
PSZB-57	2/14/06	1	1,300
PSZB-57	2/14/06	2.5	200
PSZB-57	2/14/06	6	10,000
PSZB-57	2/14/06	7.5	1,000
PSZB-57	2/14/06	10	9,900
PSZB-57	2/14/06	15	ND (<40)
PSZB-57	2/15/06	20	ND (<40)
PSZB-57	2/15/06	25	ND (<40)
PSZB-57	2/15/06	30	ND (<40)
PSZB-57	2/15/06	35	ND (<40)
PSZB-57	2/15/06	40	ND (<40)
PSZB-58	2/9/06	1	990
PSZB-58	2/9/06	2.5	1,800
PSZB-58	2/9/06	5	940
PSZB-58	2/16/06	7.5	640
PSZB-58	2/16/06	10	150
PSZB-58	2/16/06	15	ND (<40)
PSZB-58	2/16/06	20	ND (<40)
PSZB-58	2/16/06	25	ND (<40)
PSZB-58	2/16/06	30	ND (<40)
PSZB-58	2/16/06	35	ND (<40)
PSZB-58	2/16/06	40	ND (<40)
PSZB-59	2/14/06	1	ND (<40)
PSZB-59	2/14/06	2.5	52
PSZB-59	2/14/06	5	ND (<40)
PSZB-59	2/16/06	7.5	ND (<40)
PSZB-59	2/16/06	10	ND (<40)
PSZB-59	2/16/06	15	ND (<40)
PSZB-59	2/16/06	20	ND (<40)
PSZB-59	2/16/06	25	ND (<40)
PSZB-59	2/16/06	30	ND (<40)
PSZB-59	2/16/06	35	ND (<40)
PSZB-59	2/16/06	40	ND (<40)
PSZB-60	2/7/06	1	ND (<40)
PSZB-60	2/7/06	2.5	ND (<40)
PSZB-60	2/7/06	5	ND (<40)
PSZB-60	2/8/06	10	ND (<40)
PSZB-60	2/8/06	15	ND (<40)
PSZB-60	2/8/06	20	ND (<40)
PSZB-60	2/8/06	25	ND (<40)
PSZB-60	2/8/06	30	ND (<40)
PSZB-60	2/8/06	35	ND (<40)
PSZB-60	2/8/06	40	ND (<40)
PSZB-61	2/9/06	1	140
PSZB-61	2/9/06	2.5	ND (<40)
PSZB-61	2/10/06	6	67

TABLE 5-1
SUMMARY OF ANALYTICAL RESULTS FOR PERCHLORATE IN SOIL SAMPLES

Results reported in micrograms per kilogram (µg/kg)

Boring ID	Sample Date	Sample Depth (feet bgs)	EPA Method 314.0 MOD
			Perchlorate
PSZB-61	2/10/06	7.5	84
PSZB-61	2/10/06	10	ND (<40)
PSZB-61	2/10/06	15	ND (<40)
PSZB-61	2/10/06	20	ND (<40)
PSZB-61	2/10/06	25	ND (<40)
PSZB-61	2/10/06	30	ND (<40)
PSZB-61	2/10/06	35	ND (<40)
PSZB-61	2/10/06	40	ND (<40)
PSZB-62	2/9/06	1	1,600
PSZB-62	2/9/06	2.5	8,800
PSZB-62	2/9/06	5	350
PSZB-62	2/9/06	7.5	140
PSZB-62	2/9/06	10	ND (<40)
PSZB-62	2/9/06	15	ND (<40)
PSZB-62	2/9/06	20	ND (<40)
PSZB-62	2/9/06	25	ND (<40)
PSZB-62	2/10/06	30	ND (<40)
PSZB-62	2/10/06	35	ND (<40)
PSZB-62	2/10/06	40	ND (<40)
PSZB-63	2/9/06	1	ND (<40)
PSZB-63	2/9/06	2.5	53
PSZB-63	2/9/06	6	ND (<40)
PSZB-63	2/9/06	7.5	ND (<40)
PSZB-63	2/9/06	10	ND (<40)
PSZB-63	2/9/06	15	ND (<40)
PSZB-63	2/9/06	20	ND (<40)
PSZB-63	2/9/06	25	ND (<40)
PSZB-63	2/9/06	30	ND (<40)
PSZB-63	2/9/06	35	ND (<40)
PSZB-63	2/9/06	40	ND (<40)
PSZB-64	2/8/06	1	ND (<40)
PSZB-64	2/8/06	2.5	ND (<40)
PSZB-64	2/8/06	5	ND (<40)
PSZB-64	2/9/06	7.5	ND (<40)
PSZB-64	2/9/06	10	ND (<40)
PSZB-64	2/9/06	15	ND (<40)
PSZB-64	2/9/06	20	ND (<40)
PSZB-64	2/9/06	25	ND (<40)
PSZB-64	2/9/06	30	ND (<40)
PSZB-64	2/9/06	35	ND (<40)
PSZB-64	2/9/06	40	ND (<40)
PSZB-65	2/14/06	1	ND (<40)
PSZB-65	2/14/06	2.5	ND (<40)
PSZB-65	2/14/06	5	ND (<40)
PSZB-65	2/17/06	7.5	ND (<40)
PSZB-65	2/17/06	10	ND (<40)

TABLE 5-1
SUMMARY OF ANALYTICAL RESULTS FOR PERCHLORATE IN SOIL SAMPLES

Results reported in micrograms per kilogram (µg/kg)

Boring ID	Sample Date	Sample Depth (feet bgs)	EPA Method 314.0 MOD
			Perchlorate
PSZB-65	2/17/06	15	ND (<40)
PSZB-65	2/17/06	20	ND (<40)
PSZB-65	2/17/06	25	ND (<40)
PSZB-65	2/17/06	30	ND (<40)
PSZB-65	2/17/06	35	ND (<40)
PSZB-65	2/17/06	40	ND (<40)
PSZB-66	2/8/06	1	ND (<40)
PSZB-66	2/8/06	2.5	ND (<40)
PSZB-66	2/13/06	6	ND (<40)
PSZB-66	2/13/06	7.5	ND (<40)
PSZB-66	2/13/06	10	ND (<40)
PSZB-66	2/13/06	15	ND (<40)
PSZB-66	2/13/06	20	ND (<40)
PSZB-66	2/13/06	25	ND (<40)
PSZB-66	2/13/06	30	ND (<40)
PSZB-66	2/13/06	35	ND (<40)
PSZB-66	2/13/06	40	ND (<40)
PSZB-67	2/8/06	1	ND (<40)
PSZB-67	2/8/06	2.5	ND (<40)
PSZB-67	2/8/06	5.5	ND (<40)
PSZB-67	2/13/06	7.5	ND (<40)
PSZB-67	2/13/06	10	ND (<40)
PSZB-67	2/13/06	15	ND (<40)
PSZB-67	2/13/06	20	ND (<40)
PSZB-67	2/13/06	25	ND (<40)
PSZB-67	2/13/06	30	ND (<40)
PSZB-67	2/13/06	35	ND (<40)
PSZB-67	2/13/06	40	ND (<40)
PSZB-68	2/22/06	1	ND (<40)
PSZB-68	2/22/06	2.5	ND (<40)
PSZB-68	2/22/06	5	ND (<40)
PSZB-68	3/6/06	7.5	ND (<40)
PSZB-68	3/6/06	10	ND (<40)
PSZB-68	3/6/06	15	ND (<40)
PSZB-68	3/6/06	20	ND (<40)
PSZB-68	3/6/06	25	ND (<40)
PSZB-68	3/6/06	30	ND (<40)
PSZB-68	3/6/06	35	ND (<40)
PSZB-68	3/6/06	40	ND (<40)
PSZB-69	2/22/06	1	ND (<200)
PSZB-69	2/22/06	2.5	ND (<40)
PSZB-69	2/22/06	5	ND (<40)
PSZB-69	3/6/06	7.5	ND (<40)
PSZB-69	3/6/06	10	ND (<40)
PSZB-69	3/6/06	15	ND (<40)
PSZB-69	3/6/06	20	ND (<40)

TABLE 5-1
SUMMARY OF ANALYTICAL RESULTS FOR PERCHLORATE IN SOIL SAMPLES

Results reported in micrograms per kilogram ($\mu\text{g/kg}$)

Boring ID	Sample Date	Sample Depth (feet bgs)	EPA Method 314.0 MOD
			Perchlorate
PSZB-69	3/6/06	25	ND (<40)
PSZB-69	3/6/06	30	ND (<40)
PSZB-69	3/6/06	35	ND (<40)
PSZB-69	3/6/06	40	ND (<40)
PSZB-70	3/3/06	1	ND (<40)
PSZB-70	3/3/06	2.5	ND (<40)
PSZB-70	3/3/06	5	ND (<40)
PSZB-70	3/3/06	7.5	ND (<40)
PSZB-70	3/3/06	10	ND (<40)
PSZB-70	3/3/06	15	ND (<40)
PSZB-70	3/3/06	20	ND (<40)
PSZB-70	3/3/06	25	ND (<40)
PSZB-70	3/3/06	30	ND (<40)
PSZB-70	3/3/06	35	ND (<40)
PSZB-70	3/3/06	40	ND (<40)
PSZB-71	3/6/06	1	ND (<40)
PSZB-71	3/6/06	2.5	ND (<40)
PSZB-71	3/6/06	5	ND (<40)
PSZB-72	3/6/06	1	44
PSZB-72	3/6/06	2.5	43
PSZB-72	3/6/06	5	ND (<40)
PSZB-72	3/7/06	7.5	ND (<40)
PSZB-72	3/7/06	10	ND (<40)
PSZB-72	3/7/06	15	ND (<40)
PSZB-72	3/7/06	20	ND (<40)
PSZB-72	3/7/06	25	ND (<40)
PSZB-72	3/7/06	30	ND (<40)
PSZB-72	3/7/06	35	ND (<40)
PSZB-72	3/7/06	40	ND (<40)
PSZB-73	3/6/06	1	100
PSZB-73	3/6/06	2.5	110
PSZB-73	3/6/06	5	42

Notes:

1. Sample locations and results from previous work by Harding ESE (2001) shown in italics.
2. ND (<40) = Not detected above laboratory reporting limit indicated in brackets.
3. -- = No sample collected due to poor recovery.
4. NA = Sample collected but not analyzed.

TABLE 5-2

SUMMARY OF ANALYTICAL RESULTS FOR QA/QC SAMPLES

AZUSA / IRWINDALE STUDY AREA

Azusa and Irwindale, California

Results reported in micrograms per liter ($\mu\text{g/l}$)

Sample ID	Sample Date	QA/QC Sample Type	EPA Method 314.0
			Perchlorate
032105EB	3/21/05	Equipment Rinse Blank - Drill Casing	ND (<3)
032505EB	3/25/05	Equipment Rinse Blank - Drill Casing	ND (<3)
20060207EQB	2/7/06	Equipment Rinse Blank - Drill Casing	ND (<3)

I ND (<3) = Not detected above laboratory reporting limit indicated in brackets.

Table 6-1
Summary of Vadose Zone Soil Physical Parameters



Azusa/Irwindale Study Area
 Azusa and Irwindale, California

Boring	Depth (feet bgs) ¹	Lithology	Moisture Content (% by wt.) ²	Mass of Water (grams)	Mass of Solids (grams)	Dry Bulk Density (g/cm ³) ³	Total Sample Volume (cm ³)	Volume Water (cm ³)	Volume Pores (cm ³)	Total Porosity (%)	Volumetric Water Content (unitless)	Volumetric Water Content (percent)	Total Organic Carbon (mg/kg) ⁴	Fraction of Organic Carbon (unitless)
PDZB-01	8	Medium Sand	1.1	1.1	98.9	2.12	46.65	1.10	8.02	17.2	0.0236	2.36	1300	0.0013
PDZB-01	28	Coarse Sand	1.8	1.8	98.2	2.06	47.67	1.80	9.68	20.3	0.0378	3.78	1050	0.00105
PDZB-01	48	Medium Sand	1.2	1.2	98.8	2.08	47.50	1.20	11.78	24.8	0.0253	2.53	1150	0.00115
PDZB-01	68	Gravel	0.9	0.9	99.1	1.97	50.30	0.90	13.93	27.7	0.0179	1.79	1150	0.00115
PDZB-01	88	Medium Sand	6.3	6.3	93.7	1.89	49.58	6.31	13.63	27.5	0.1273	12.73	810	0.00081
PDZB-01	98	Medium Sand	2.7	2.7	97.3	2.03	47.93	2.71	11.89	24.8	0.0564	5.64	1250	0.00125
PDZB-15	8	Medium Sand	2.3	2.3	97.7	2.12	46.08	2.30	8.85	19.2	0.0500	5.00	1150	0.00115
PDZB-15	28	Coarse Sand	1	1	99	2.07	47.83	1.00	10.62	22.2	0.0209	2.09	1150	0.00115
PDZB-15	48	Coarse Sand	1.8	1.8	98.2	2.16	45.46	1.80	8.27	18.2	0.0397	3.97	1200	0.0012
PDZB-15	68	Coarse Sand	3.6	3.6	96.4	2.12	45.47	3.61	8.87	19.5	0.0793	7.93	1450	0.00145
PDZB-15	98	Coarse Sand	2.7	2.7	97.3	1.94	50.15	2.71	13.19	26.3	0.0539	5.39	1150	0.00115
Mean						2.05				22.52		4.84		0.0012

Notes

1 feet bgs = feet below ground surface.

2 % by wt. = percent by weight

3 g/cm³ = grams per cubic centimeter

4 mg/kg = milligrams per kilogram

TABLE 6-2
VS2DT INPUT PARAMETERS
Azusa/Irwindale Study Area
Azusa and Irwindale, California

Base Case Input Parameter	Value
Horizontal Saturated Hydraulic Conductivity	350 feet per day (ft/day)
Hydraulic Conductivity Vertical Anisotropy	10:1
Initial Moisture Content	5%
Vadose Zone Porosity	23%
Effective Saturated Zone Porosity	10%
Ambient Infiltration from Precipitation	3 inches per year (in/year)
Van Genuchten Parameters	
Alpha	2.59
Beta	1.35
Residual Moisture Content	3%
Longitudinal Dispersivity	20 feet
Ratio of Longitudinal:Transverse Dispersivity	10

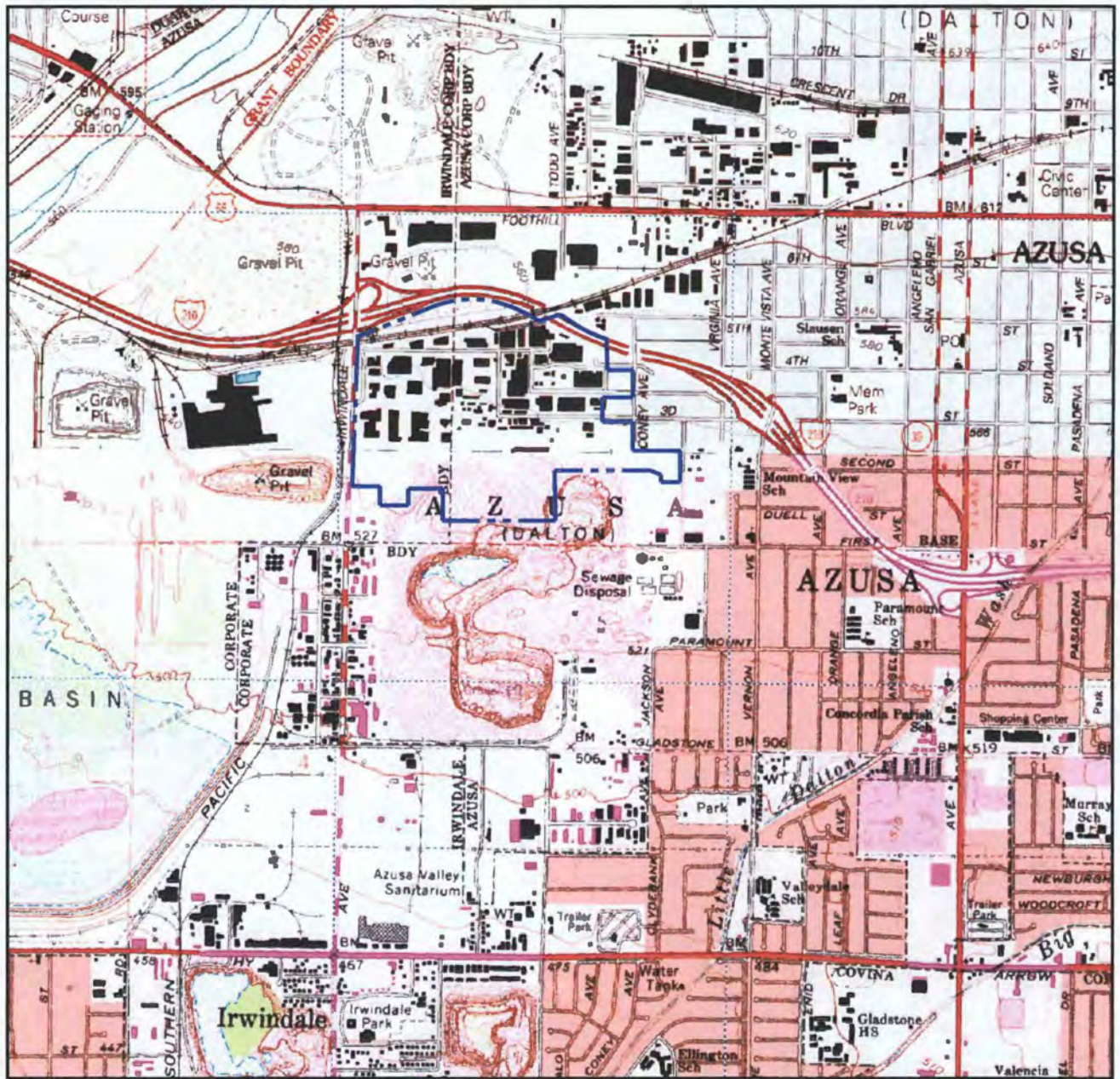
TABLE 6-3
VS2DT SENSITIVITY SIMULATIONS
 Azusa/Irwindale Study Area
 Azusa and Irwindale, California

Input Parameter	Value	Peak Soil Concentration (mg/kg) ¹ based on Groundwater Concentration of 6 µg/l ² at Site Boundary	Percent Change (%)	Time of Peak Concentration at Site Boundary (years)	Percent Change (%)
Saturated Hydraulic Conductivity					
Ksat ³ - Increase	450 ft/day	1641	26.04%	79	-2.47%
Ksat - Base Case	350 ft/day	1302	0.00%	81	0.00%
Ksat - Decrease	275 ft/day	1044	-19.86%	83	2.50%
Residual Moisture Content					
RMC ⁴ - Increase	4%	1364	4.78%	87	6.90%
RMC - Base Case	3%	1302	0.00%	81	0.00%
RMC - Decrease	1%	1170	-10.18%	70	-13.37%
Initial Moisture Content					
Initial Vw - Increase	10%	1372	5.33%	74	-8.44%
Initial Vw - Base Case	5%	1302	0.00%	81	0.00%
Initial Vw - Decrease	4%	1240	-4.79%	83	2.57%
Vadose Zone Porosity					
Porosity - Increase	28%	1482	13.77%	97	19.91%
Porosity - Base Case	23%	1302	0.00%	81	0.00%
Porosity - Decrease	17%	1061	-18.52%	62	-23.67%
Ambient Infiltration from Precipitation					
Infiltration Rate - Increase	4 in/year	1000	-23.19%	63	-22.77%
Infiltration Rate - Base Case	3 in/year	1302	0.00%	81	0.00%
Infiltration Rate - Decrease	2 in/year	1892	45.32%	117	44.22%
Longitudinal Dispersivity					
αL ⁵ - Increase	30 feet	1343	3.17%	73	-9.94%
αL - Base Case	20 feet	1302	0.00%	81	0.00%
αL - Decrease	10 feet	1093	-16.04%	91	11.94%
Ratio of Longitudinal:Transverse Dispersivity					
αL/αT ⁶ - Increase	20	1302	-0.03%	81	0.07%
αL/αT - Base Case	10	1302	0.00%	81	0.00%
αL/αT - Decrease	5	1303	0.04%	81	-0.02%

Notes:

- 1 mg/kg = milligrams per kilogram.
- 2 µg/l = micrograms per liter
- 3 Ksat = saturated hydraulic conductivity.
- 4 RMC = residual moisture content
- 5 αL = longitudinal dispersivity.
- 6 αT = transverse dispersivity

FIGURES



EXPLANATION

--- EXPANDED BOUNDARY OF
AZUSA/IRWINDALE STUDY AREA (AISA)

Base map modified from U.S.G.S. 7.5 minute quadrangle maps AZUSA, California 1995,
and BALDWIN PARK, California 1966; Photo Revised 1981.

SITE LOCATION MAP ASUZA / IRWINDALE STUDY AREA Azusa and Irwindale, California

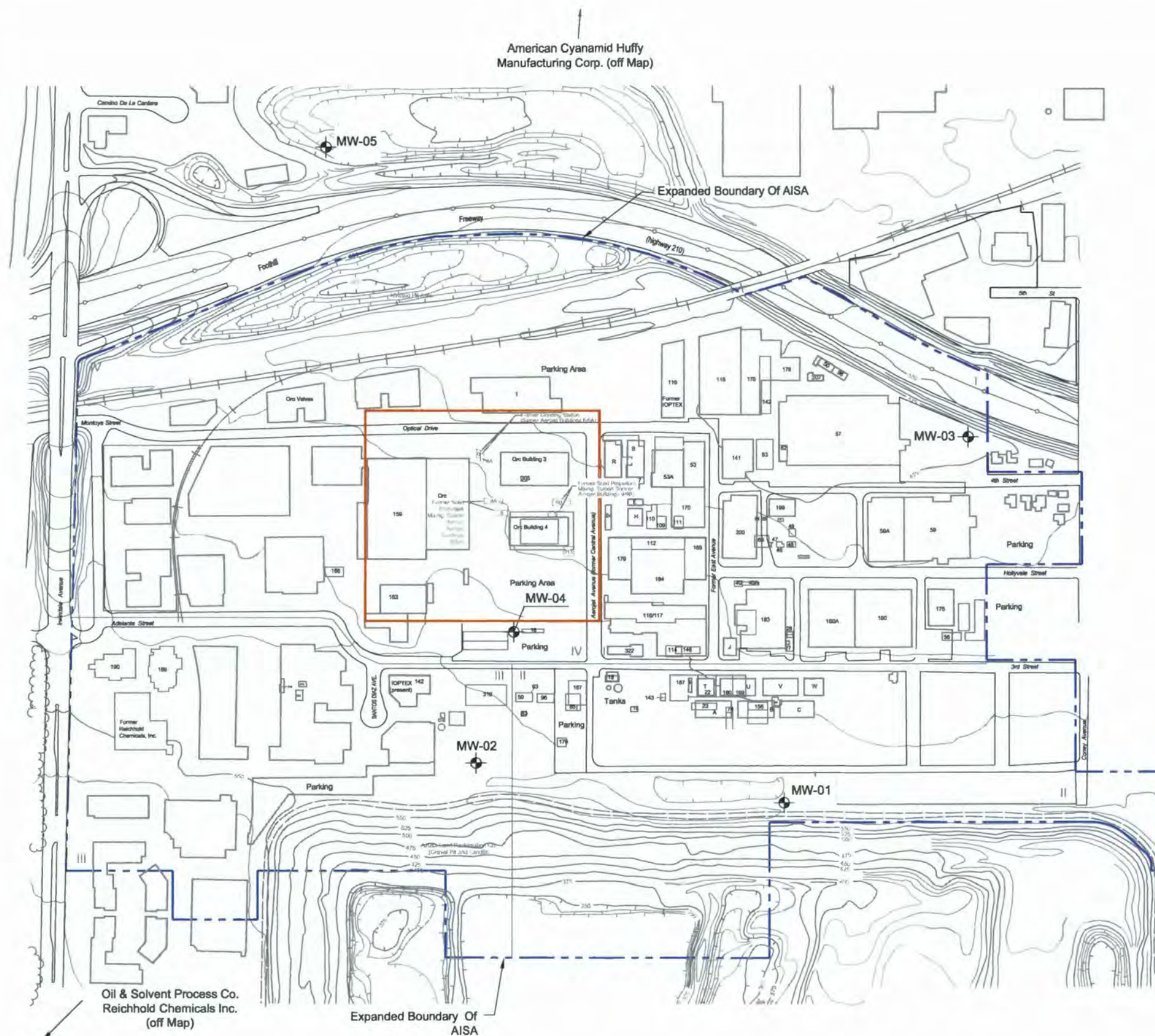
By: jrw Date: 3/29/06 Project No. 7190.005








Geomatrix

Figure 1-1

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Plot Time:

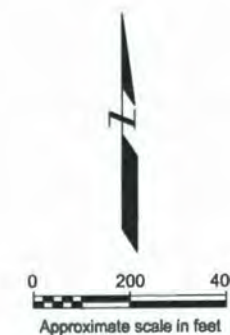


Explanation

- MW-05  Groundwater monitoring well
-  Former building location (with building number)
-  Current building location (with building number)
- AISA Azusa/Irwindale study area
-  Expanded boundary of AISA
-  Study area (See Figure 3 for detail)

Note:

All locations are approximate.



Basemap modified from Harding ESE, dated 2001.

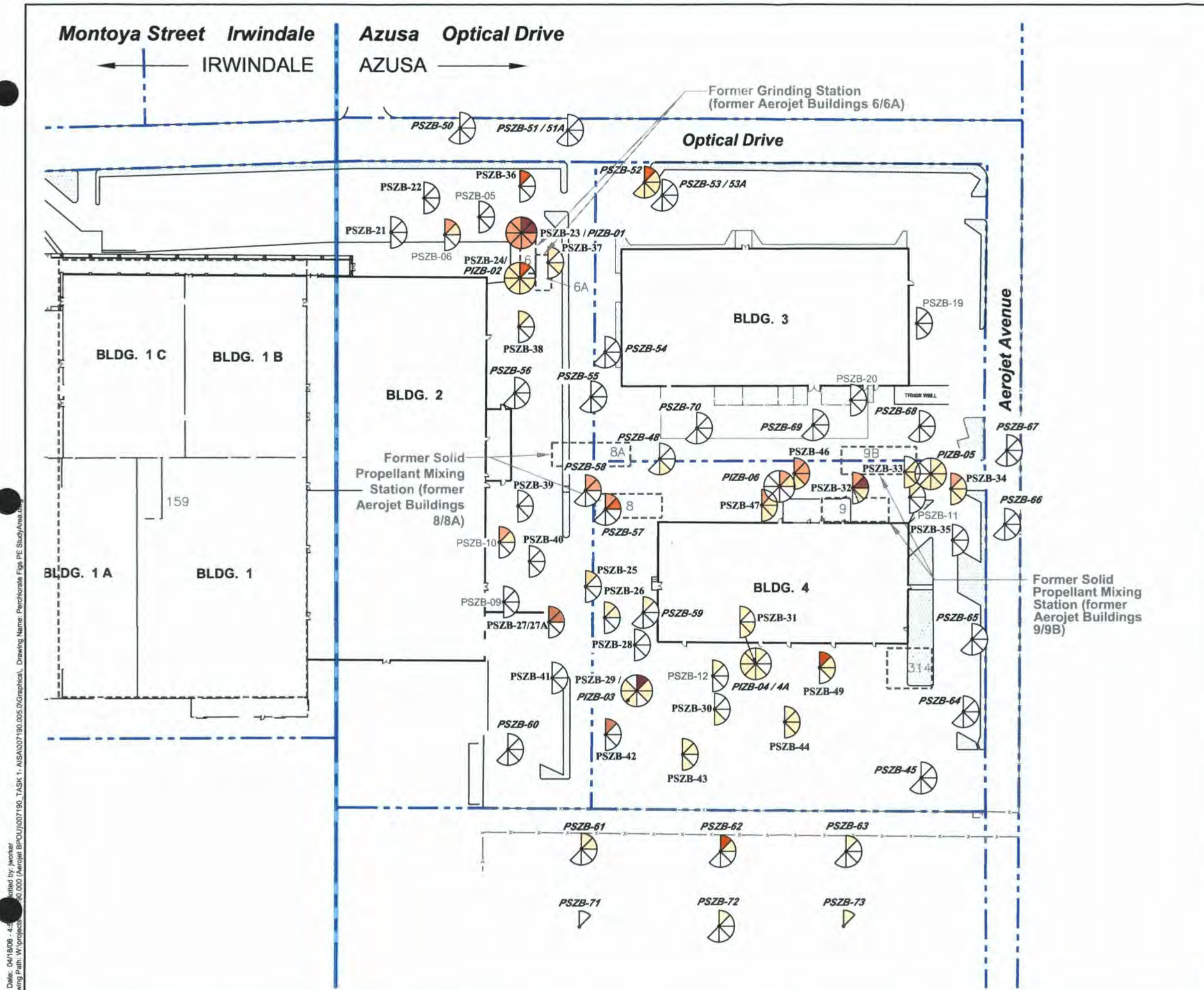
STUDY AREA WITHIN THE AISA

ASUZA / IRWINDALE STUDY AREA
Azusa and Irwindale, California

By: jrw Date: 4/18/06 Project No. 7190.005



Figure 1-2



Explanation

PSZB-73 Shallow zone boring (Geomatrix, February-March 2006)

PIZB-06 Intermediate zone boring (Geomatrix, February-March 2006)

PSZB-49 Shallow zone boring (Geomatrix, March-April 2005)

PSZB-12 Shallow zone boring (Phase I - HLA, October 2000)

PSZB-20 Shallow zone boring (Phase II - Harding ESE, April 2001)

Boring location with symbol divided into depth zones in feet below ground surface with the highest concentration within the zone shown by colors defined below. Bottom depth zone wedge split with supplemental dashed line when bottom sample is ND

PIZB-04 / 4A

- Perchlorate not detected at laboratory reporting limit of 40 micrograms per kilogram ($\mu\text{g}/\text{kg}$)
- Perchlorate results $> 40 \mu\text{g}/\text{kg}$
- Perchlorate results $> 500 \mu\text{g}/\text{kg}$
- Perchlorate results $> 5,000 \mu\text{g}/\text{kg}$
- Perchlorate results $> 50,000 \mu\text{g}/\text{kg}$

- Current building
- Former building
- Chain link fence
- Parcel boundary
- Irwindale-Azusa boundary

0 40 80
Approximate scale in feet

Basemap modified from a map provided by Perkinelmer, dated July, 2003, Cal Vada surveys of April 2005, and February/March of 2006, and Los Angeles County Assessor parcel boundary maps.

DEPTH ZONE SUMMARY OF ANALYTICAL RESULTS FOR PERCHLORATE IN SOIL

ASUZA / IRWINDALE STUDY AREA

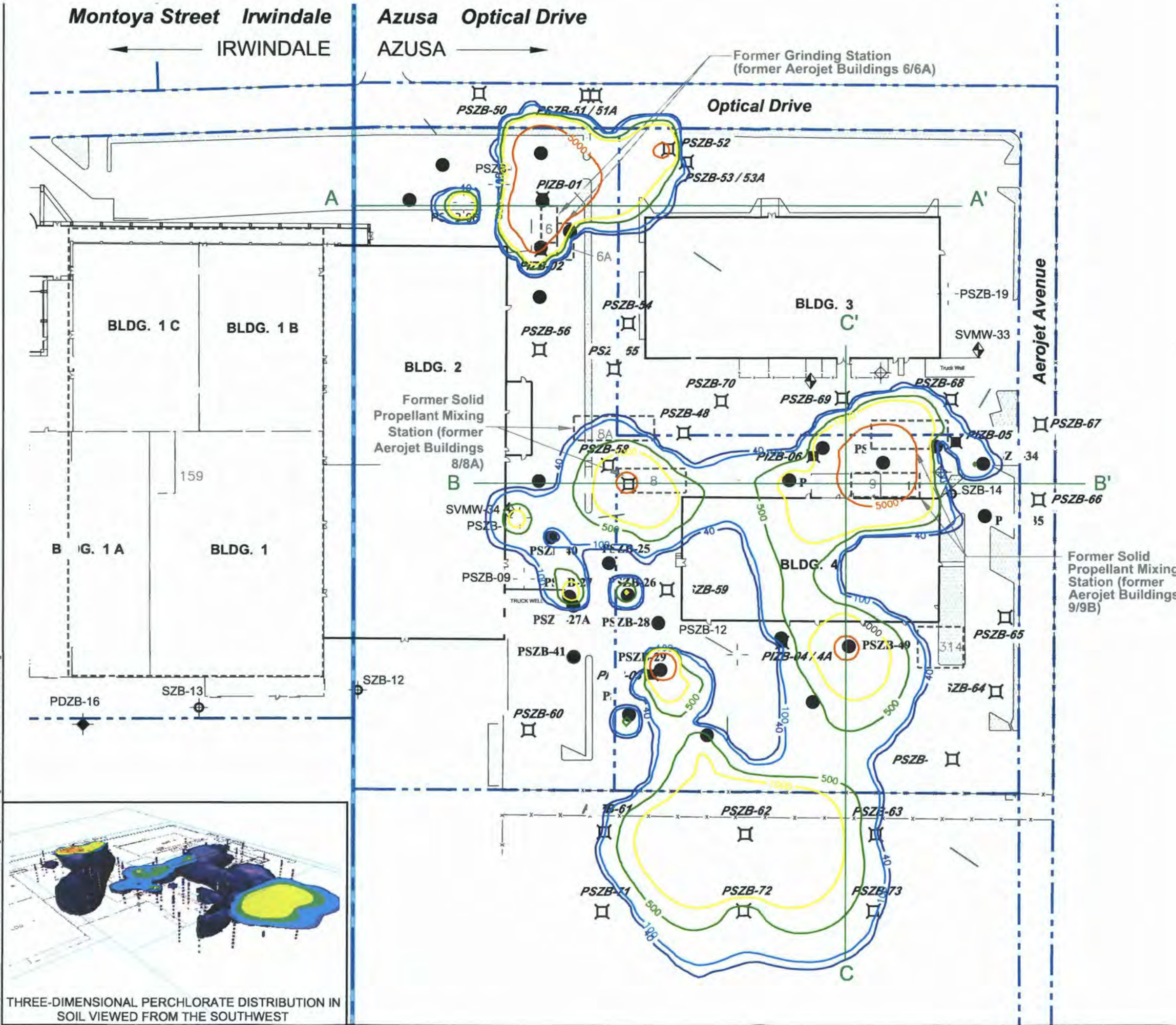
Asuza and Irwindale, California

By: jrw Date: 4/18/06 Project No. 7190.005

Geomatrix Figure 5-1

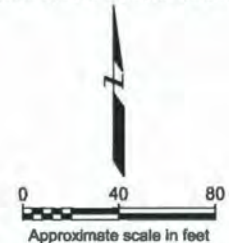
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Plot Date: 04/18/06 - 8:43pm, Plotted by: LineDesign
Drawing Path: N:\302 Geomatrix 06\Azusa-Irwindale\Figures\, Drawing Name: Azusa-Irwindale Perchlorate.dwg



- Explanation**
- PSZB-49 ● Shallow zone boring (Geomatrix, March-April 2005)
 - PIZB-06 ■ Intermediate zone boring (Geomatrix, February-March 2006)
 - PSZB-73 ■ Shallow zone boring (Geomatrix, February-March 2006)
 - PSZB-12 ⊕ Shallow zone boring (Phase I - HLA, October 2000)
 - PSZB-20 ⊕ Shallow zone boring (Phase II - Harding ESE, April 2001)
 - PDZB-16 ◆ Deep zone boring (Phase II - Harding ESE, April 2001)
 - SZB-20 ⊕ Shallow zone boring (HLA, 1994)
 - SVMW-37 ◆ Vadose monitoring well (HLA, 1994)
 - 9 Former building
 - Current building
 - Parcel boundary
 - Irwindale-Azusa boundary
 - 40 Perchlorate Isoconcentration Contour (40 ug/kg)
 - 100 Perchlorate Isoconcentration Contour (100 ug/kg)
 - 500 Perchlorate Isoconcentration Contour (500 ug/kg)
 - 1000 Perchlorate Isoconcentration Contour (1000 ug/kg)
 - 5000 Perchlorate Isoconcentration Contour (5000 ug/kg)
 - A — A' Section Location(s)

NOTE:
THE ISOCONCENTRATION CONTOURS SHOWN ON THE VARIOUS VIEWS REPRESENT INTERPOLATED APPROXIMATIONS OF THE DISTRIBUTION OF PERCHLORATE IN SOIL BASED ON AVAILABLE DATE.

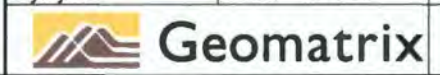


Basemap modified from a map provided by PerkinElmer, dated July, 2003, Cal Vada surveys of April 2005, and February/March of 2006, and Los Angeles County Assessor parcel boundary maps.

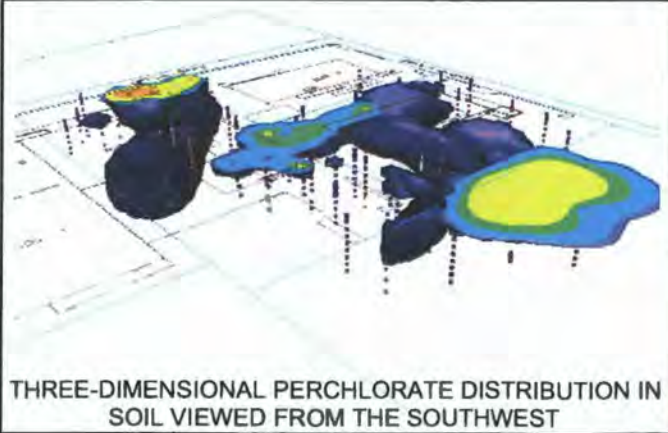
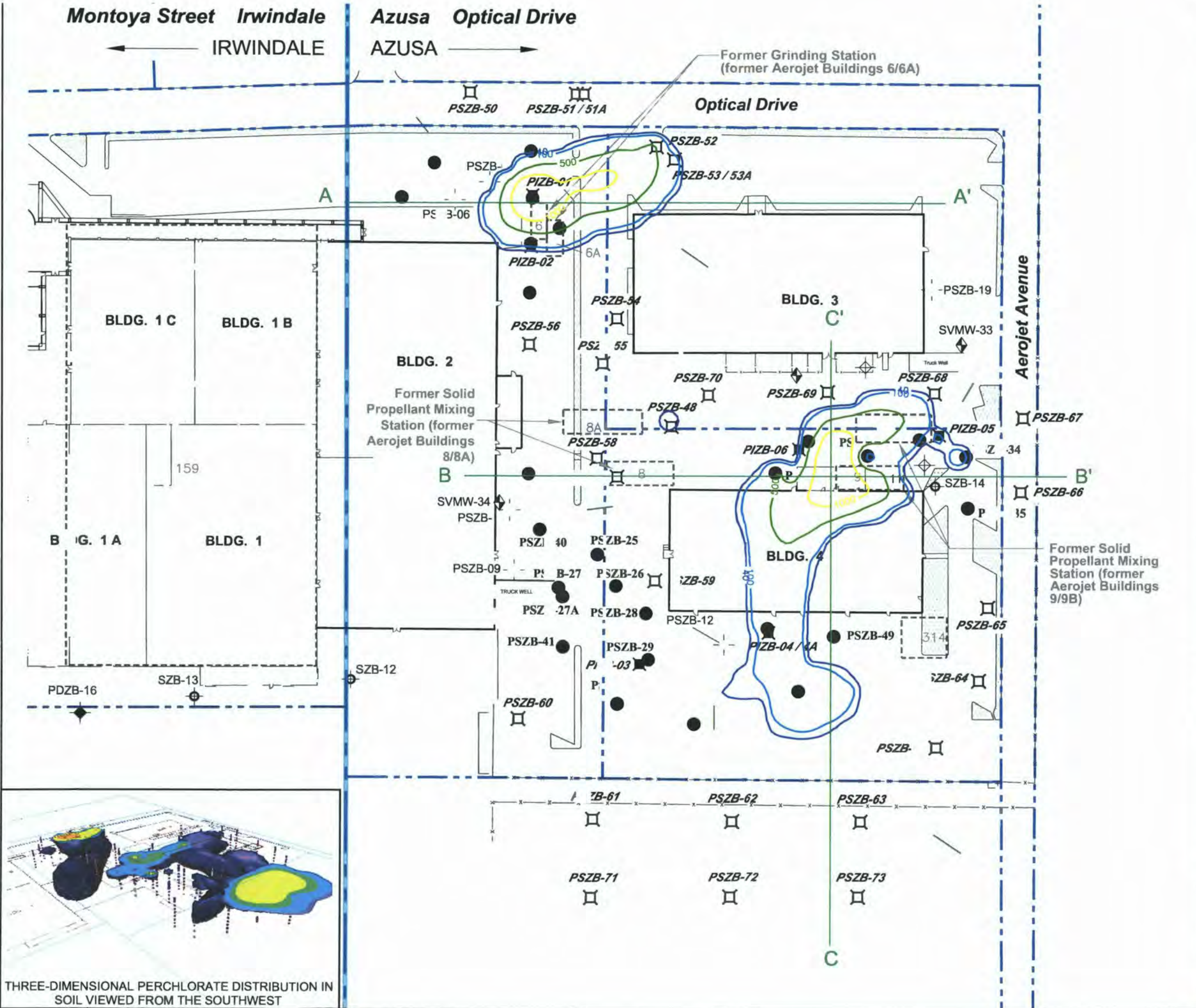
DISTRIBUTION OF PERCHLORATE ABOVE 20 FEET BGS

ASUZA / IRWINDALE STUDY AREA
Azusa and Irwindale, California

By: jrw/lid Date: 4/7/06 Project No. 7190.005

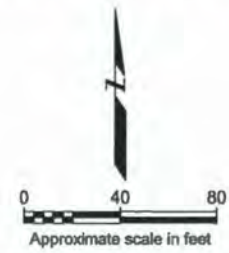


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- Explanation**
- PSZB-49 ● Shallow zone boring (Geomatrix, March-April 2005)
 - PIZB-06 ■ Intermediate zone boring (Geomatrix, February-March 2006)
 - PSZB-73 ■ Shallow zone boring (Geomatrix, February-March 2006)
 - PSZB-12 ■ Shallow zone boring (Phase I - HLA, October 2000)
 - PSZB-20 ■ Shallow zone boring (Phase II - Harding ESE, April 2001)
 - PDZB-16 ■ Deep zone boring (Phase II - Harding ESE, April 2001)
 - SZB-20 ■ Shallow zone boring (HLA, 1994)
 - SVMW-37 ■ Vadose monitoring well (HLA, 1994)
 - 9 Former building
 - Current building
 - Parcel boundary
 - Irwindale-Azusa boundary
 - 40 Perchlorate Isoconcentration Contour (40 ug/kg)
 - 100 Perchlorate Isoconcentration Contour (100 ug/kg)
 - 500 Perchlorate Isoconcentration Contour (500 ug/kg)
 - 1000 Perchlorate Isoconcentration Contour (1000 ug/kg)
 - A — A' Section Location(s)

NOTE:
THE ISOCONCENTRATION CONTOURS SHOWN ON THE VARIOUS VIEWS REPRESENT INTERPOLATED APPROXIMATIONS OF THE DISTRIBUTION OF PERCHLORATE IN SOIL BASED ON AVAILABLE DATE.



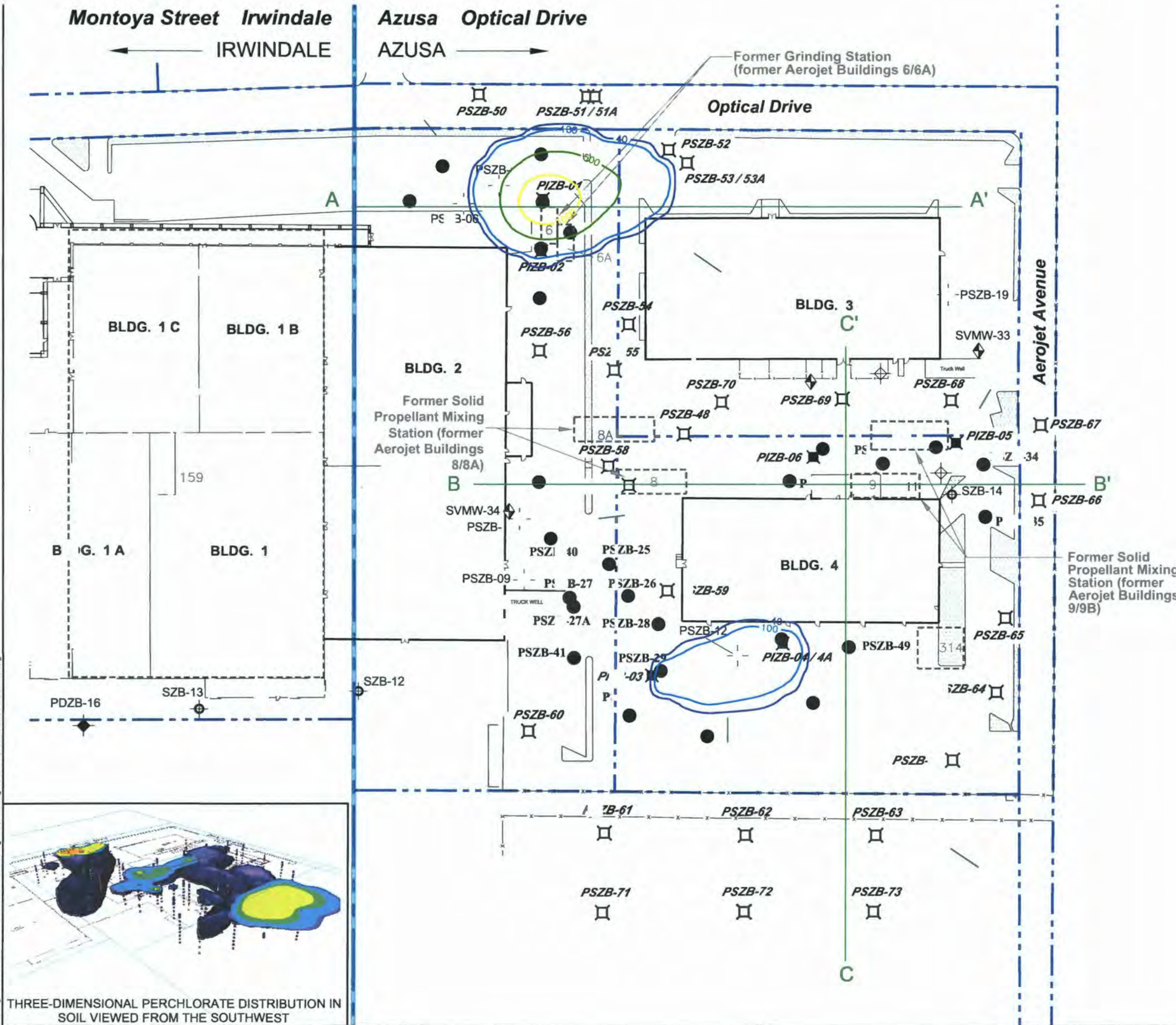
Basemap modified from a map provided by PerkinElmer, dated July, 2003, Cal Vada surveys of April 2005, and February/March of 2006, and Los Angeles County Assessor parcel boundary maps.

**DISTRIBUTION OF PERCHLORATE
BETWEEN 20 FEET AND 40 FEET BGS**

ASUZA / IRWINDALE STUDY AREA
Azusa and Irwindale, California

By: jrw/ld Date: 4/7/06 Project No. 7190.005

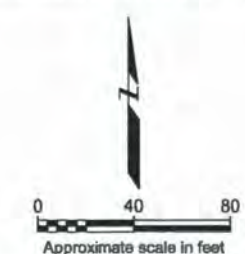
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THREE-DIMENSIONAL PERCHLORATE DISTRIBUTION IN SOIL VIEWED FROM THE SOUTHWEST

- Explanation**
- PSZB-49 ● Shallow zone boring (Geomatrix, March-April 2005)
 - PIZB-06 ■ Intermediate zone boring (Geomatrix, February-March 2006)
 - PSZB-73 ■ Shallow zone boring (Geomatrix, February-March 2006)
 - PSZB-12 ⊕ Shallow zone boring (Phase I - HLA, October 2000)
 - PSZB-20 ⊕ Shallow zone boring (Phase II - Harding ESE, April 2001)
 - PDZB-16 ⊕ Deep zone boring (Phase II - Harding ESE, April 2001)
 - SZB-20 ⊕ Shallow zone boring (HLA, 1994)
 - SVMW-37 ⊕ Vadose monitoring well (HLA, 1994)
 - 9 Former building
 - Current building
 - Parcel boundary
 - Irwindale-Azusa boundary
 - 40 Perchlorate Isoconcentration Contour (40 ug/kg)
 - 100 Perchlorate Isoconcentration Contour (100 ug/kg)
 - 500 Perchlorate Isoconcentration Contour (500 ug/kg)
 - 1000 Perchlorate Isoconcentration Contour (1000 ug/kg)
 - A — A' Section Location(s)

NOTE:
THE ISOCONCENTRATION CONTOURS SHOWN ON THE VARIOUS VIEWS REPRESENT INTERPOLATED APPROXIMATIONS OF THE DISTRIBUTION OF PERCHLORATE IN SOIL BASED ON AVAILABLE DATE.

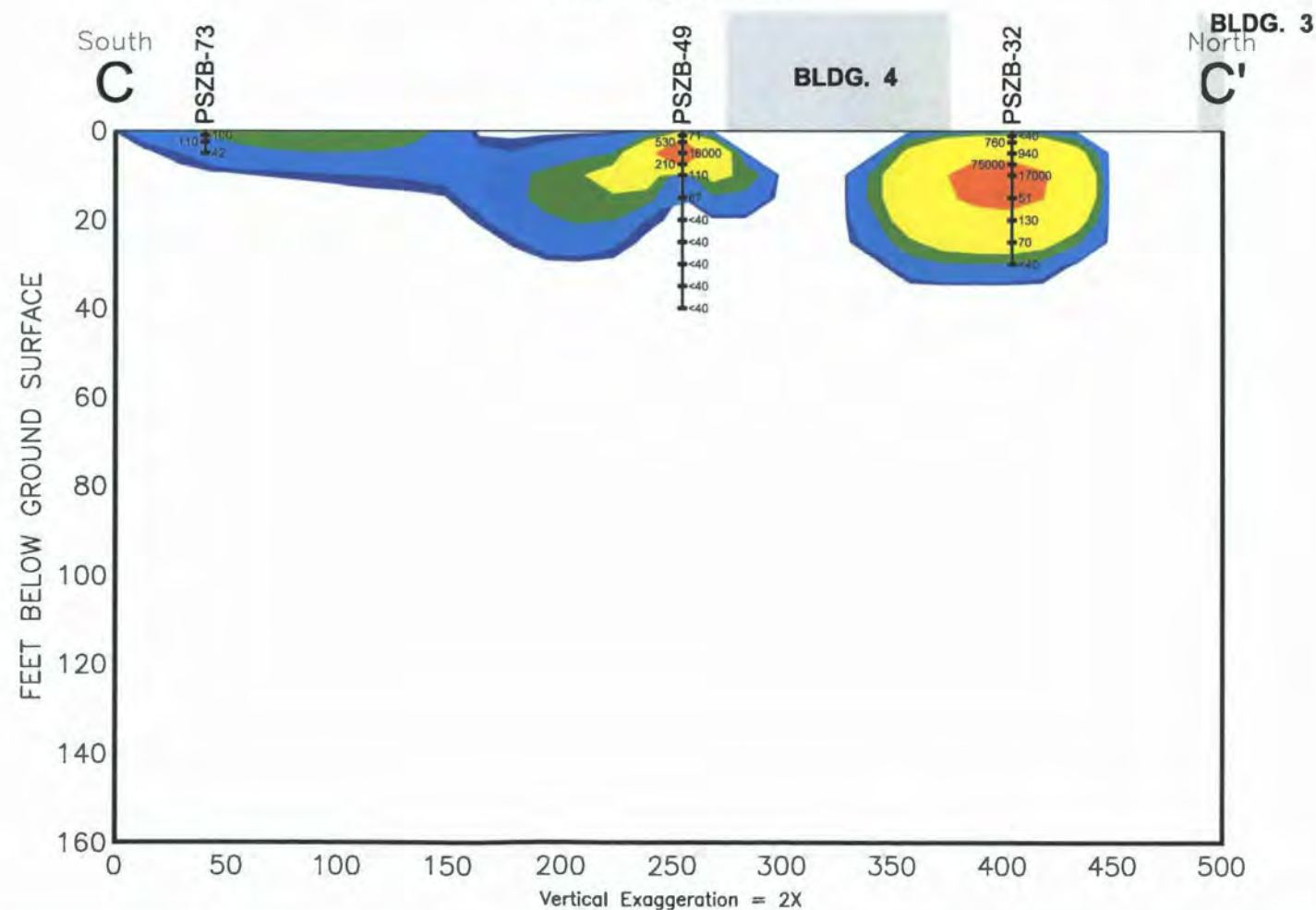
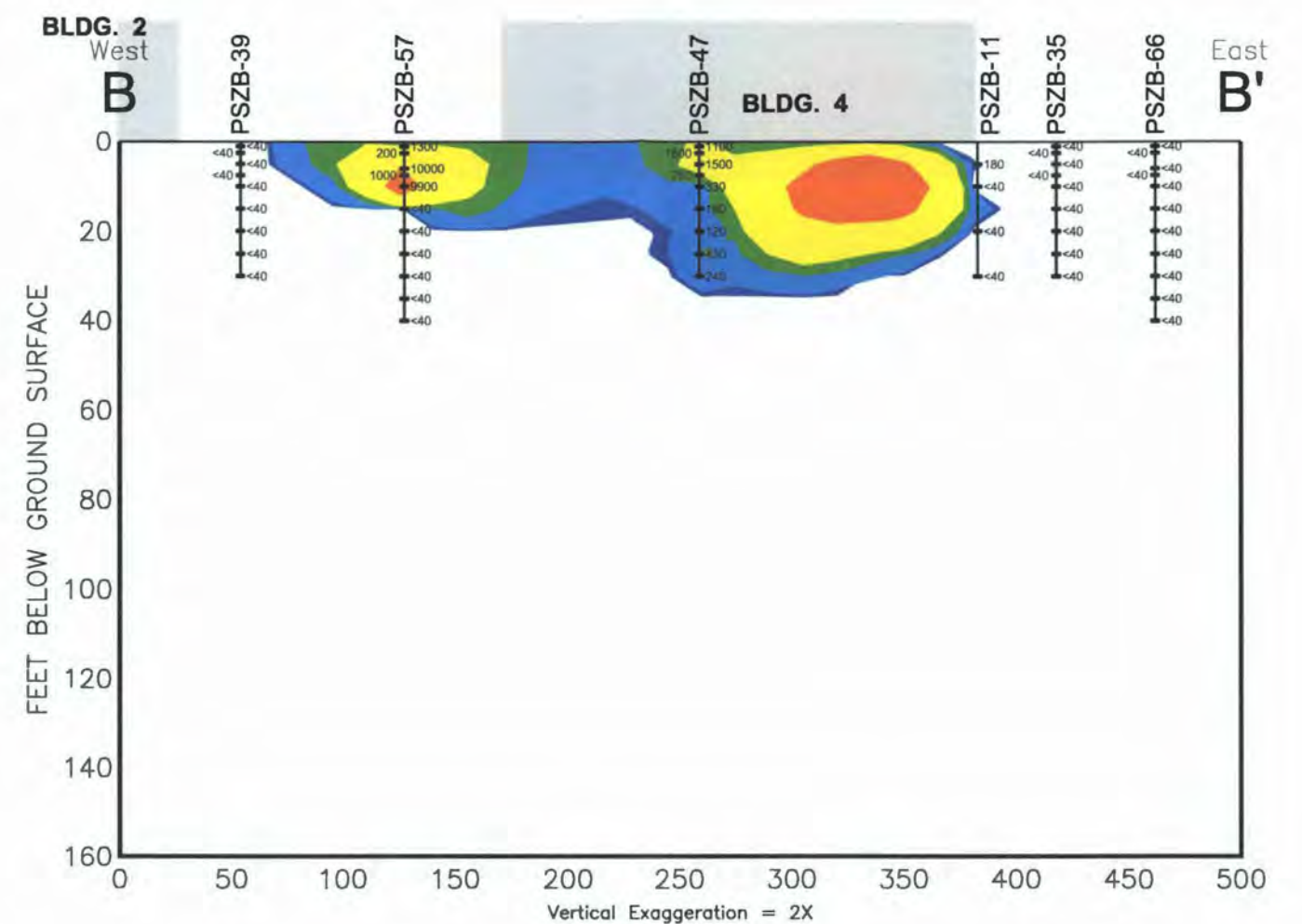
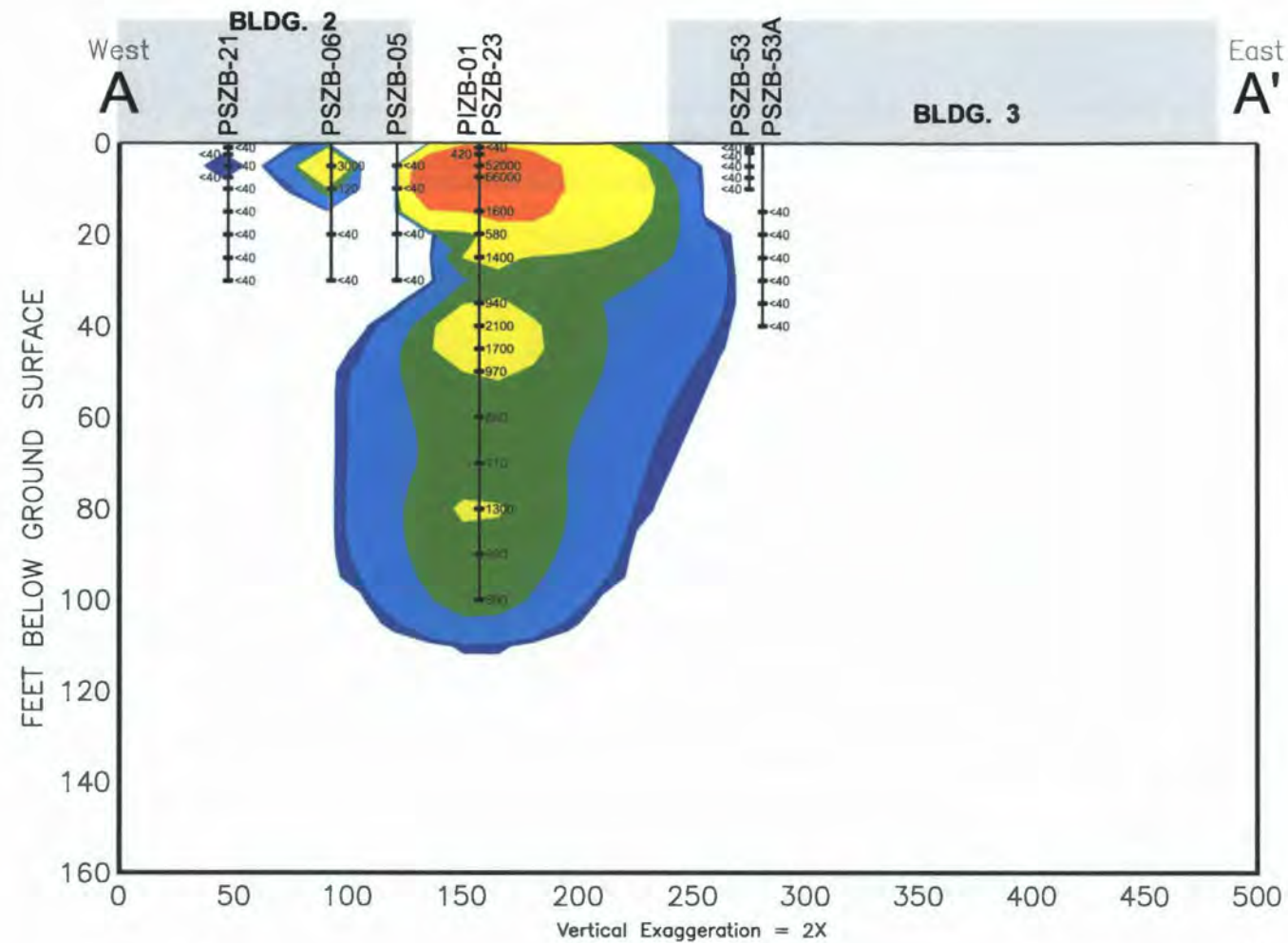


Basemap modified from a map provided by PerkinElmer, dated July, 2003, Cal Vada surveys of April 2005, and February/March of 2006, and Los Angeles County Assessor parcel boundary maps.

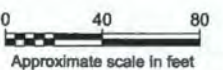
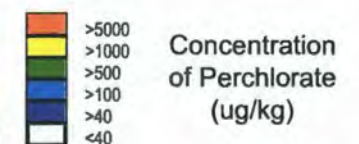
DISTRIBUTION OF PERCHLORATE BELOW 40 FEET BGS

ASUZA / IRWINDALE STUDY AREA
Azusa and Irwindale, California

By: jrw/ld Date: 4/7/06 Project No. 7190.005



Explanation



NOTE:
THE ISOCONCENTRATION CONTOURS SHOWN ON THE VARIOUS
VIEWS REPRESENT INTERPOLATED APPROXIMATIONS OF THE
DISTRIBUTION OF PERCHLORATE IN SOIL BASED ON AVAILABLE DATE.

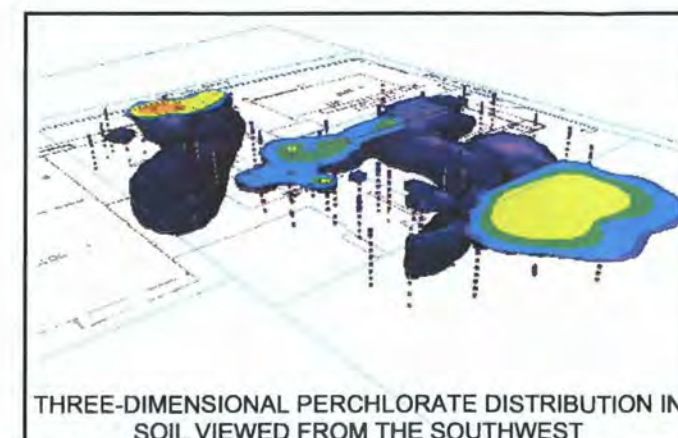
CROSS SECTION A-A', CROSS SECTION B-B' and
CROSS SECTION C-C'

ASUZA / IRWINDALE STUDY AREA
Azusa and Irwindale, California

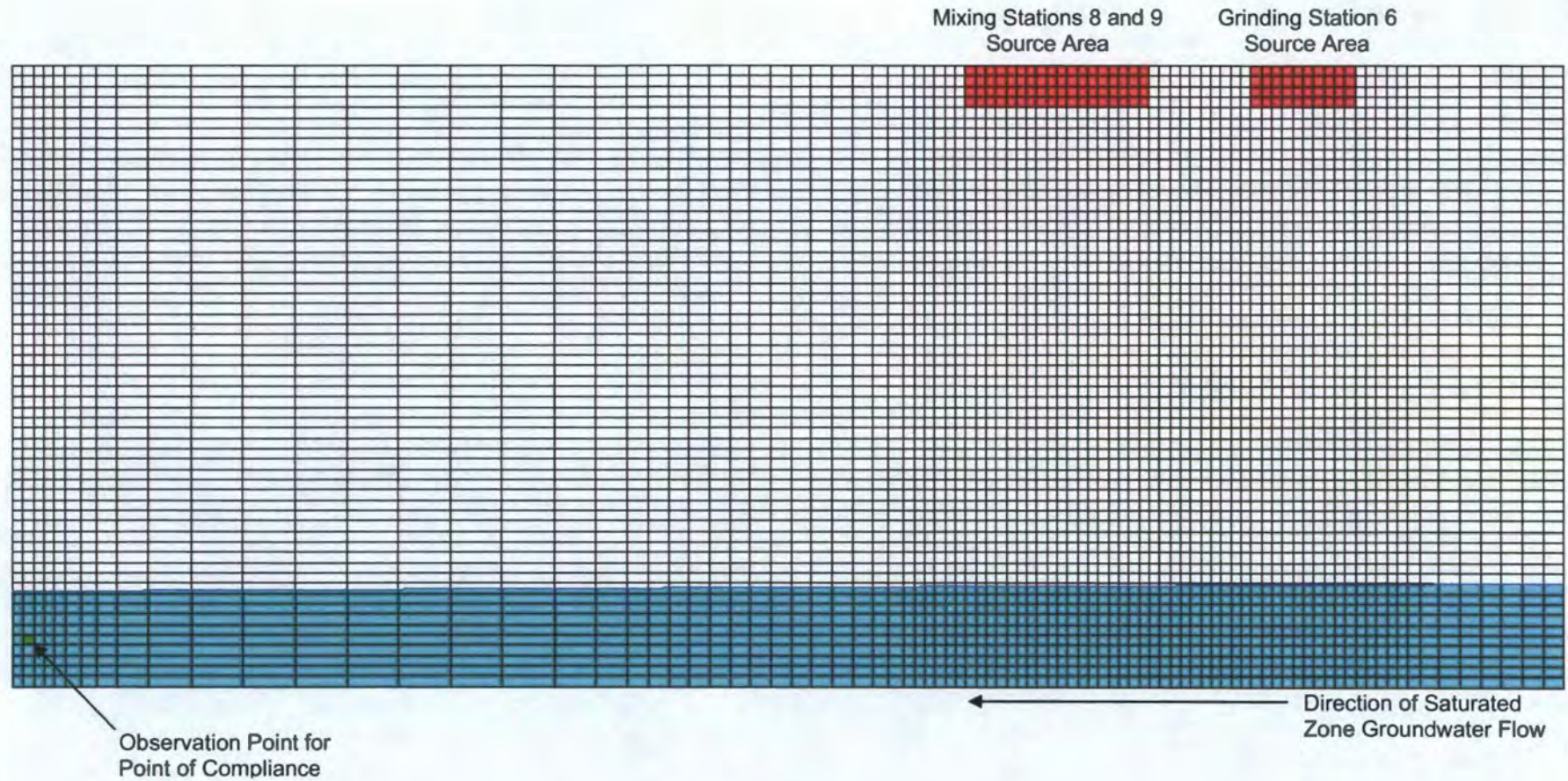
By: Id Date: 4/7/06 Project No. 7190.005

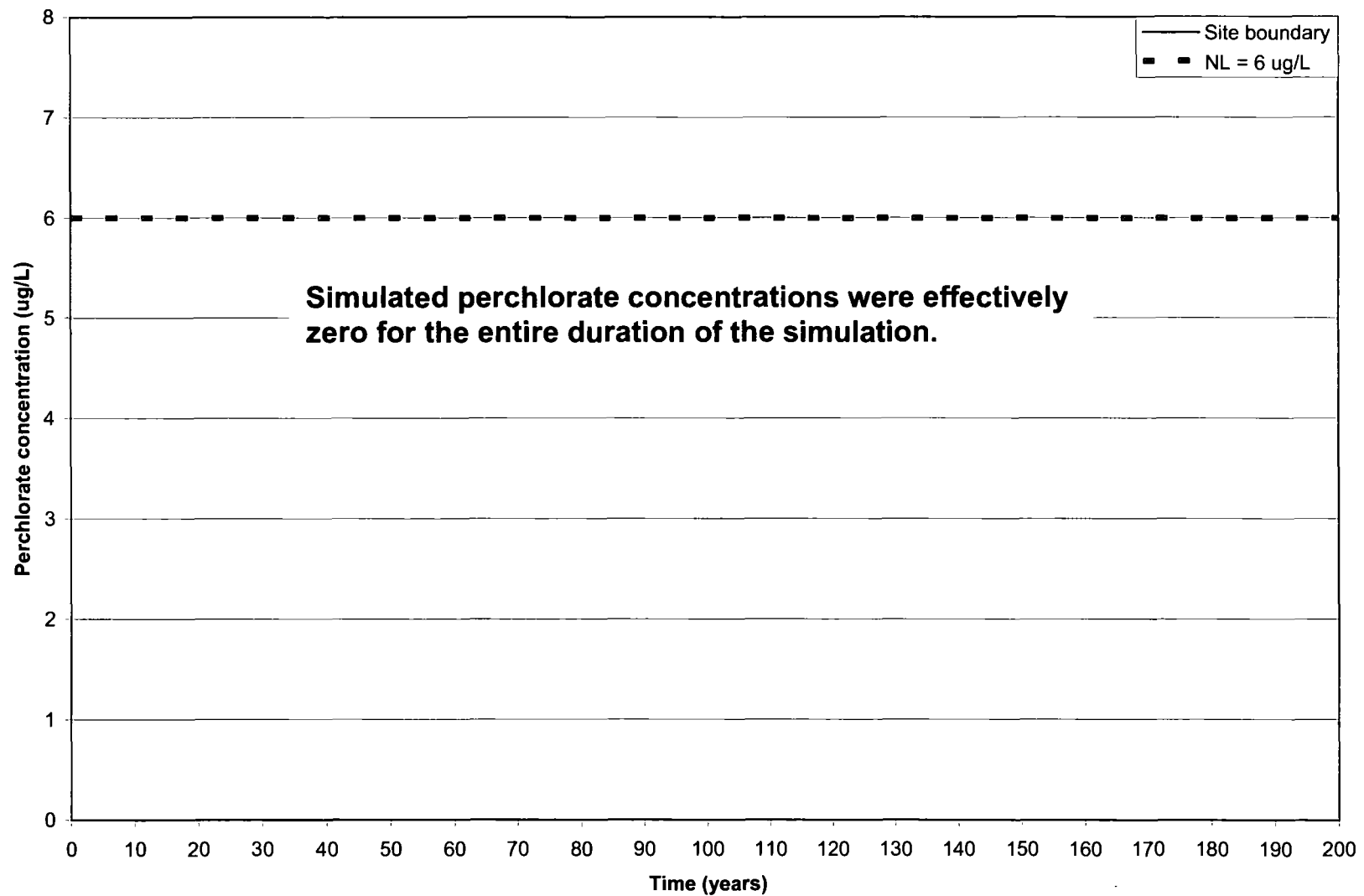
Geomatrix

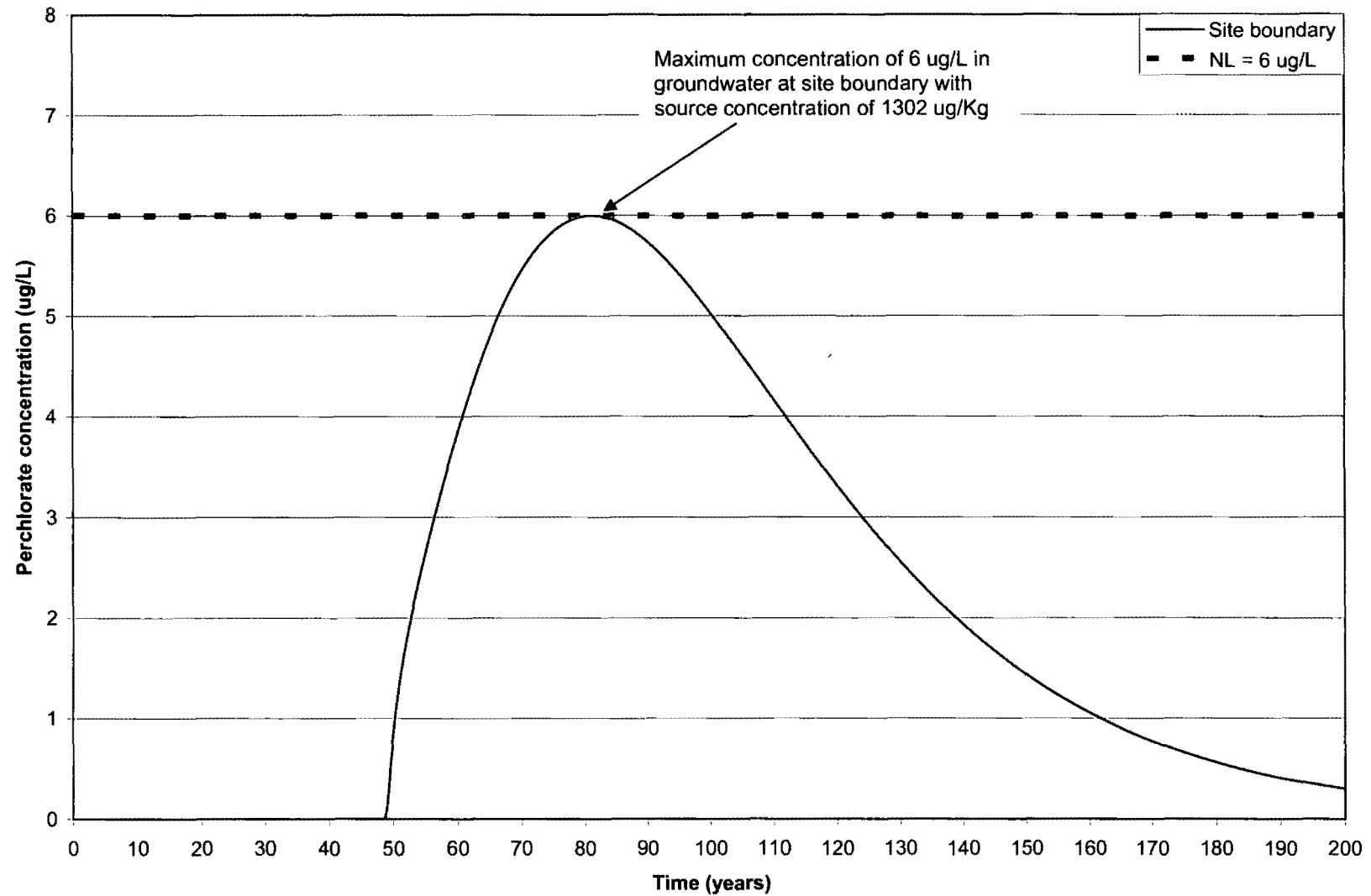
Figure 5-6



THREE-DIMENSIONAL PERCHLORATE DISTRIBUTION IN
SOIL VIEWED FROM THE SOUTHWEST







**PARTIALLY SCANNED
OVERSIZE ITEM(S)**

See document # 2279345
for partially scanned image(s).

PLATE 1

For complete hardcopy version of the oversize document
contact the Region IX Superfund Records Center

APPENDIX A

BORING LOGS

PROJECT: AZUSA/IRWINDALE STUDY AREA Azusa and Irwindale, California					Log of Boring No. PIZB-01				
BORING LOCATION: PerkinElmer					ELEVATION AND DATUM: 568.47 ft msl (NAVD 88)				
DRILLING CONTRACTOR: Layne Christenson, Co.					DATE STARTED: 2/27/06		DATE FINISHED: 2/27/06		
DRILLING METHOD: Dual Wall Air Percussion					TOTAL DEPTH (ft.): 100.5		MEASURING POINT: Ground surface		
DRILLING EQUIPMENT: Foremost Drills AP-1000					DEPTH TO WATER	FIRST NA	COMPL. NA	24 HRS. NA	
SAMPLING METHOD: Cuttings from cyclone					LOGGED BY: P. Jeffers				
HAMMER WEIGHT: NA			DROP: NA		RESPONSIBLE PROFESSIONAL: G. Rees			REG. NO. 6612	

DEPTH (feet)	SAMPLES			DESCRIPTION	PID READING (ppm)	REMARKS
	Sample No.	Sample	Blows/ 6 inches	NAME (USCS): color, moist, % by wt., plast. density, structure, cementation, react. w/HCl, geo. inter.		
				Surface Elevation: 568.47 ft msl (NAVD 88)		
				~3" asphalt		
				SEE BORING LOG FOR PSZB-23 (located approximately 2 feet south) FOR LITHOLOGY TO 30' bgs		
1						
2						
3						
4						
5						
6						
7						
8						
9						
10						
11						
12						
13						
14						

Geomatrix Consultants

Project No. 7190.005.0

Page 1 of 7

RMRK3

PROJECT: AZUSA/IRWINDALE STUDY AREA
Azusa and Irwindale, California

Log of Boring No. PIZB-01 (cont'd)

DEPTH (feet)	SAMPLES			DESCRIPTION NAME (USCS): color, moist, % by wt., plast. density, structure, cementation, react. w/HCl, geo. inter.	PID READING (ppm)	REMARKS
	Sample No.	Sample	Blows/ 6 inches			
15				SEE BORING LOG FOR PSZB-23 (located approximately 2 feet south) FOR LITHOLOGY TO 30' bgs		
16						
17						
18						
19						
20						
21						
22						
23						
24						
25						
26						
27						
28						
29						
30						
31						



DEPTH (feet)	SAMPLES			DESCRIPTION NAME (USCS): color, moist, % by wt., plast. density, structure, cementation, react. w/HCl, geo. inter.	PID READING (ppm)	REMARKS
	Sample No.	Sample	Blows/ 6 inches			
32						
33						
34						
35	PIZB-01-35			POORLY GRADED GRAVEL with SAND (GP): grayish brown (10YR 5/2), moist, ~85% gravel, ~15% fine to coarse sand		
36						
37						
38				~70% gravel, ~30% fine to coarse sand, trace fines		
39						
40	PIZB-01-40					
41						
42						
43				~85% gravel, ~15% fine to coarse sand		
44						
45	PIZB-01-45					
46						
47						
48						

RMK3



PROJECT: AZUSA/IRWINDALE STUDY AREA
Azusa and Irwindale, California

Log of Boring No. PIZB-01 (cont'd)

DEPTH (feet)	SAMPLES			DESCRIPTION NAME (USCS): color, moist, % by wt., plast. density, structure, cementation, react. w/HCl, geo. inter.	PID READING (ppm)	REMARKS
	Sample No.	Sample	Blows/ 6 inches			
49				POORLY GRADED GRAVEL with SAND (GP): continued		
50	PIZB-01-50					
51						
52						
53						
54						
55						
56						
57						
58						
59						
60	PIZB-01-60					
61						
62						
63						
64						
65						

~80% gravel, ~20% fine to coarse sand



PROJECT: AZUSA/IRWINDALE STUDY AREA
Azusa and Irwindale, California

Log of Boring No. PIZB-01 (cont'd)

DEPTH (feet)	SAMPLES			DESCRIPTION NAME (USCS): color, moist, % by wt., plast. density, structure, cementation, react. w/HCl, geo. inter.	PID READING (ppm)	REMARKS
	Sample No.	Sample	Blows/ 6 inches			
66				~85% gravel, ~15% fine to coarse sand ↓		
67						
68						
69						
70	PIZB-01-70					
71						
72						
73						Difficult drilling 73' - 78' bgs
74						
75				~75% gravel, ~25% fine to coarse sand ↓		
76						
77						
78						
79						
80	PIZB-01-80					
81						
82						

RMK3



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Project No. 7190.005.0

Page 5 of 7

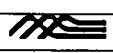
DEPTH (feet)	SAMPLES			DESCRIPTION NAME (USCS): color, moist, % by wt., plast. density, structure, cementation, react. w/HCl, geo. inter.	PID READING (ppm)	REMARKS
	Sample No.	Sample	Blows/ 6 inches			
83				POORLY GRADED GRAVEL with SAND (GP): continued ~85% gravel, ~15% fine to coarse sand ↓		
84						
85						
86						
87						
88						
89						
90	PIZB-01-90					
91						
92						
93				POORLY GRADED SAND with GRAVEL (SP): dark brown (7.5YR 3/4), moist, ~70% fine to coarse sand, ~30% gravel, trace fines		
94						
95						
96						
97						
98						
99						

RMK3



PROJECT: AZUSA/IRWINDALE STUDY AREA Azusa and Irwindale, California				Log of Boring No. PIZB-01 (cont'd)		
DEPTH (feet)	SAMPLES			DESCRIPTION NAME (USCS): color, moist, % by wt., plast. density, structure, cementation, react. w/HCl, geo. inter.	PID READING (ppm)	REMARKS
	Sample No.	Sample	Blows/ 6 inches			
100	PIZB-01-100			POORLY GRADED SAND with GRAVEL (SP): continued		Boring backfilled with bentonite chips and continuously hydrated Surface patched with asphalt
101				Bottom of boring at 100.5 ft bgs		
102						
103						
104						
105						
106						
107						
108						
109						
110						
111						
112						
113						
114						
115						
116						

RMRK3



PROJECT: AZUSA/IRWINDALE STUDY AREA Azusa and Irwindale, California					Log of Boring No. PIZB-02				
BORING LOCATION: PerkinElmer .					ELEVATION AND DATUM: 567.08 ft msl (NAVD 88)				
DRILLING CONTRACTOR: Layne Christenson, Co.					DATE STARTED: 2/28/06		DATE FINISHED: 2/28/06		
DRILLING METHOD: Dual Wall Air Percussion					TOTAL DEPTH (ft.): 100.5		MEASURING POINT: Ground surface		
DRILLING EQUIPMENT: Foremost Drills AP-1000					DEPTH TO WATER	FIRST NA	COMPL. NA	24 HRS. NA	
SAMPLING METHOD: Cuttings from cyclone					LOGGED BY: P. Jeffers				
HAMMER WEIGHT: NA			DROP: NA		RESPONSIBLE PROFESSIONAL: G. Rees			REG. NO. 6612	
DEPTH (feet)	SAMPLES			DESCRIPTION NAME (USCS): color, moist, % by wt., plast. density, structure, cementation, react. w/HCl, geo. inter.	PID READING (ppm)	REMARKS			
	Sample No.	Sample	Blows/ 6 inches						
				Surface Elevation: 567.08 ft msl (NAVD 88)					
1				~3" asphalt SEE BORING LOG FOR PSZB-24 (located approximately 2 feet north) FOR LITHOLOGY TO 30' bgs		Hand augered to 2.5 feet below ground surface (bgs)			
2						Drilled to 100.5' bgs with 9" casing and hammer bit			
3						Drilled continuously to 35' bgs, begin collecting samples at 35' bgs			
4						Lithology assessed from cuttings collected through the cyclone			
5									
6									
7									
8									
9									
10									
11									
12									
13									
14									

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Project No. 7190.005.0

Page 1 of 7

PROJECT: AZUSA/IRWINDALE STUDY AREA
Azusa and Irwindale, California

Log of Boring No. PIZB-02 (cont'd)

DEPTH (feet)	SAMPLES			DESCRIPTION NAME (USCS): color, moist, % by wt, plast. density, structure, cementation, react. w/HCl, geo. inter.	PID READING (ppm)	REMARKS
	Sample No.	Sample	Blows/ 6 inches			
15				SEE BORING LOG FOR PSZB-24 (located approximately 2 feet north) FOR LITHOLOGY TO 30' bgs		
16						
17						
18						
19						
20						
21						
22						
23						
24						
25						
26						
27						
28						
29						
30						
31						

RMRK3



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Project No. 7190.005.0

Page 2 of 7

DEPTH (feet)	SAMPLES			DESCRIPTION NAME (USCS): color, moist, % by wt., plast. density, structure, cementation, react. w/HCl, geo. inter.	PID READING (ppm)	REMARKS
	Sample No.	Sample	Blows/ 6 inches			
32						
33						
34						
35	PIZB-02-35			POORLY GRADED GRAVEL with SAND (GP): brown (7.5YR 5/3), moist, ~80% gravel, ~20% fine to coarse sand		
36						
37						
38				~75% gravel, ~25% fine to coarse sand		
39						
40	PIZB-02-40					
41						
42				~85% gravel, ~15% fine to coarse sand		
43						
44						
45	PIZB-02-45					
46						
47						
48						

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DEPTH (feet)	SAMPLES			DESCRIPTION NAME (USCS): color, moist, % by wt., plast. density, structure, cementation, react. w/HCl, geo. inter.	PID READING (ppm)	REMARKS
	Sample No.	Sample	Blows/ 6 inches			
49				POORLY GRADED GRAVEL with SAND (GP): continued		
50	PIZB-02-50					
51						
52						
53						
54						
55						
56						
57						
58						
59						
60	PIZB-02-60					
61						
62						
63						
64						
65						

~75% gravel, ~25% fine to coarse sand



PROJECT: AZUSA/IRWINDALE STUDY AREA
Azusa and Irwindale, California

Log of Boring No. PIZB-02 (cont'd)

DEPTH (feet)	SAMPLES			DESCRIPTION NAME (USCS): color, moist, % by wt., plast. density, structure, cementation, react. w/HCl, geo. inter.	PID READING (ppm)	REMARKS
	Sample No.	Sample	Blows/ 6 inches			
66				~85% gravel, ~15% fine to coarse sand, trace fines ↓		
67						
68						
69						
70	PIZB-02-70					
71						
72						
73						
74						
75						
76				~80% gravel, ~20% fine to medium sand ↓		
77						
78						
79						
80	PIZB-02-80					
81						
82						

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Geomatrix Consultants

Project No. 7190.005.0

Page 5 of 7

PROJECT: AZUSA/IRWINDALE STUDY AREA
Azusa and Irwindale, California

Log of Boring No. PIZB-02 (cont'd)

DEPTH (feet)	SAMPLES			DESCRIPTION NAME (USCS): color, moist, % by wt., plast. density, structure, cementation, react. w/HCl, geo. inter.	PID READING (ppm)	REMARKS
	Sample No.	Sample	Blows/ 6 inches			
83				POORLY GRADED GRAVEL with SAND (GP): continued		
84						
85						
86						
87						
88						
89						
90	PIZB-02-90					
91						
92						
93						
94						
95				~80% gravel, ~20% fine to coarse sand		
96						
97						
98						
99						

RMRK3



Geomatrix Consultants

Project No. 7190.005.0

Page 6 of 7

PROJECT: AZUSA/IRWINDALE STUDY AREA
Azusa and Irwindale, California

Log of Boring No. PIZB-02 (cont'd)

DEPTH (feet)	SAMPLES			DESCRIPTION NAME (USCS): color, moist, % by wt., plast. density, structure, cementation, react. w/HCl, geo. inter.	PID READING (ppm)	REMARKS
	Sample No.	Sample	Blows/ 6 inches			
100	PIZB-02-100			POORLY GRADED GRAVEL with SAND (GP): continued		Boring backfilled with bentonite chips and continuously hydrated Surface patched with asphalt
101				Bottom of boring at 100.5 ft bgs		
102						
103						
104						
105						
106						
107						
108						
109						
110						
111						
112						
113						
114						
115						
116						

RMRK3



Geomatrix Consultants

Project No. 7190.005.0

Page 7 of 7



PROJECT: AZUSA/IRWINDALE STUDY AREA Azusa and Irwindale, California					Log of Boring No. PIZB-03				
BORING LOCATION: PerkinElmer					ELEVATION AND DATUM: 564.35 ft msl (NAVD 88)				
DRILLING CONTRACTOR: Layne Christenson, Co.					DATE STARTED: 3/1/06		DATE FINISHED: 3/1/06		
DRILLING METHOD: Dual Wall Air Percussion					TOTAL DEPTH (ft.): 100.5		MEASURING POINT: Ground surface		
DRILLING EQUIPMENT: Foremost Drills AP-1000					DEPTH TO WATER		FIRST NA	COMPL. NA	24 HRS. NA
SAMPLING METHOD: Cuttings from cyclone					LOGGED BY: P. Jeffers				
HAMMER WEIGHT: NA			DROP: NA		RESPONSIBLE PROFESSIONAL: G. Rees			REG. NO. 6612	
DEPTH (feet)	SAMPLES			DESCRIPTION NAME (USCS): color, moist, % by wt., plast. density, structure, cementation, react. w/HCl, geo. inter.	PID READING (ppm)	REMARKS			
	Sample No.	Sample	Blows/ 6 inches						
				Surface Elevation: 564.35 ft msl (NAVD 88)					
				~3" asphalt		Hand augered to 2.5 feet below ground surface (bgs)			
1				SEE BORING LOG FOR PSZB-29 (located approximately 8 feet northeast) FOR LITHOLOGY TO 30' bgs		Drilled to 100.5' bgs with 9" casing and hammer bit			
2						Drilled continuously to 35' bgs, begin collecting samples at 35' bgs			
3						Lithology assessed from cuttings collected through the cyclone			
4									
5									
6									
7									
8									
9									
10									
11									
12									
13									
14									



PROJECT: AZUSA/IRWINDALE STUDY AREA
Azusa and Irwindale, California

Log of Boring No. PIZB-03 (cont'd)

DEPTH (feet)	SAMPLES			DESCRIPTION NAME (USCS): color, moist, % by wt., plast. density, structure, cementation, react. w/HCl, geo. inter.	PID READING (ppm)	REMARKS
	Sample No.	Sample	Blows/ 6 inches			
15				SEE BORING LOG FOR PSZB-29 (located approximately 8 feet northeast) FOR LITHOLOGY TO 30' bgs		
16						
17						
18						
19						
20						
21						
22						
23						
24						
25						
26						
27						
28						
29						
30						
31						

RMRK3



Geomatrix Consultants

Project No. 7190.005.0

Page 2 of 7

DEPTH (feet)	SAMPLES			DESCRIPTION NAME (USCS): color, moist, % by wt., plast. density, structure, cementation, react. w/HCl, geo. inter.	PID READING (ppm)	REMARKS
	Sample No.	Sample	Blows/ 6 inches			
32						
33						
34						
35	PIZB-03-35			POORLY GRADED SAND with GRAVEL (SP): brown (7.5YR 5/4), moist, ~85% fine to coarse sand, ~15% gravel		
36						
37						
38				POORLY GRADED GRAVEL with SAND (GP): light bluish gray (GLEYS 7/1), moist, ~85% gravel, ~15% fine to coarse sand, trace fines		
39						
40	PIZB-03-40					
41						
42						
43				POORLY GRADED SAND with GRAVEL (SP): brown (7.5YR 5/4), moist, ~75% fine to coarse sand, ~25% gravel, trace fines		
44						
45	PIZB-03-45					
46						
47						
48				~70% fine to coarse sand, ~30% gravel		

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PROJECT: AZUSA/IRWINDALE STUDY AREA
Azusa and Irwindale, California

Log of Boring No. PIZB-03 (cont'd)

DEPTH (feet)	SAMPLES			DESCRIPTION NAME (USCS): color, moist, % by wt., plast. density, structure, cementation, react. w/HCl, geo. inter.	PID READING (ppm)	REMARKS
	Sample No.	Sample	Blows/ 6 inches			
49				POORLY GRADED SAND with GRAVEL (SP): continued		
50	PIZB-03-50					
51						
52						
53						
54						
55						
56						
57						
58						
59						
60	PIZB-03-60			~80% fine to coarse sand, ~20% gravel, trace fines		
61						
62						
63						
64						
65						



Geomatrix Consultants

Project No. 7190.005.0

Page 4 of 7

RMRK3

PROJECT: AZUSA/IRWINDALE STUDY AREA
Azusa and Irwindale, California

Log of Boring No. PIZB-03 (cont'd)

DEPTH (feet)	SAMPLES			DESCRIPTION NAME (USCS): color, moist, % by wt., plast. density, structure, cementation, react. w/HCl, geo. inter.	PID READING (ppm)	REMARKS
	Sample No.	Sample	Blows/ 6 inches			
66				POORLY GRADED GRAVEL with SAND (GP): light gray (5YR 7/1), moist, ~85% gravel, ~15% fine to coarse sand, trace fines		Gravel/sand contact at 65' bgs
67						
68						
69						
70	PIZB-03-70					
71						
72						
73						
74						
75						
76				~75% gravel, ~25% fine to coarse sand ↓		
77						
78						
79						
80	PIZB-03-80					
81						
82						

RMRK3



Geomatrix Consultants

Project No. 7190.005.0

Page 5 of 7

DEPTH (feet)	SAMPLES			DESCRIPTION NAME (USCS): color, moist, % by wt., plast. density, structure, cementation, react. w/HCl, geo. inter.	PID READING (ppm)	REMARKS
	Sample No.	Sample	Blows/ 6 inches			
83				POORLY GRADED GRAVEL with SAND (GP): continued		
84						
85				~85% gravel, ~15% fine to coarse sand		
86						
87						
88						
89						
90	PIZB-03-90					
91						
92						
93						
94						
95				~75% gravel, ~25% fine to coarse sand		
96						
97						
98						
99						

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PROJECT: AZUSA/IRWINDALE STUDY AREA
Azusa and Irwindale, California

Log of Boring No. PIZB-03 (cont'd)

DEPTH (feet)	SAMPLES			DESCRIPTION NAME (USCS): color, moist, % by wt., plast. density, structure, cementation, react. w/HCl, geo. inter.	PID READING (ppm)	REMARKS
	Sample No.	Sample	Blows/ 6 inches			
100	PIZB-03-100			POORLY GRADED GRAVEL with SAND (GP): continued		Boring backfilled with bentonite chips and continuously hydrated Surface patched with asphalt
101				Bottom of boring at 100.5 ft bgs		
102						
103						
104						
105						
106						
107						
108						
109						
110						
111						
112						
113						
114						
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116						

RMRK3



Geomatrix Consultants

Project No. 7190.005.0

Page 7 of 7

PROJECT: AZUSA/IRWINDALE STUDY AREA Azusa and Irwindale, California					Log of Boring No. PIZB-04				
BORING LOCATION: PerkinElmer					ELEVATION AND DATUM: 566.62 ft msl (NAVD 88)				
DRILLING CONTRACTOR: Layne Christenson, Co.					DATE STARTED: 2/7/06		DATE FINISHED: 2/7/06		
DRILLING METHOD: Dual Wall Air Percussion					TOTAL DEPTH (ft.): 50.5		MEASURING POINT: Ground surface		
DRILLING EQUIPMENT: Foremost Drills AP-1000					DEPTH TO WATER	FIRST NA	COMPL. NA	24 HRS. NA	
SAMPLING METHOD: Cuttings from cyclone					LOGGED BY: P. Jeffers				
HAMMER WEIGHT: NA			DROP: NA		RESPONSIBLE PROFESSIONAL: G. Rees			REG. NO. 6612	

DEPTH (feet)	SAMPLES			DESCRIPTION <small>NAME (USCS): color, moist, % by wt., plast. density, structure, cementation, react. w/HCl, geo. inter.</small>	PID READING (ppm)	REMARKS
	Sample No.	Sample	Blows/ 6 inches			
				Surface Elevation: 566.62 ft msl (NAVD 88)		
				~4" asphalt		
1	PIZB-04-1			POORLY GRADED GRAVEL with SAND (GP): dark brown (10YR 4/3), moist, ~60% gravel, ~35% fine to medium sand, ~5% nonplastic fines		Hand augered to 2.5 feet below ground surface (bgs) 1' and 2.5' samples collected from sidewalls of boring
2						
3	PIZB-04-2.5					Drilled to 50.5' bgs with 9" casing and hammer bit
4						
5	PIZB-04-5			POORLY GRADED SAND with GRAVEL (SP): dark grayish brown (2.5Y 4/2), moist, ~60% fine to coarse sand, ~40% gravel, trace fines		Lithology assessed from cuttings collected through the cyclone
6						
7				POORLY GRADED GRAVEL with SAND (GP): dark grayish brown (2.5Y 4/2), moist, ~75% gravel, ~25% fine to coarse sand, trace fines		
8	PIZB-04-7.5					
9				~55% gravel, ~45% fine to coarse sand, trace fines ↓		
10	PIZB-04-10					
11						
12						
13				~75% gravel, ~25% fine to coarse sand, trace fines ↓		
14						

Geomatrix Consultants

Project No. 7190.005.0

Page 1 of 4

RMRK3

DEPTH (feet)	SAMPLES			DESCRIPTION NAME (USCS): color, moist, % by wt., plast. density, structure, cementation, react. w/HCl, geo. inter.	PID READING (ppm)	REMARKS
	Sample No.	Sample	Blows/ 6 inches			
15	PIZB-04-15			POORLY GRADED GRAVEL with SAND (GP): continued ~65% gravel, ~35% fine to coarse sand, trace fines		
16						
17						
18						
19						
20	PIZB-04-20					
21						
22						
23						
24						
25	PIZB-04-25					
26						
27						
28						
29						
30	PIZB-04-30					
31						

RMRK3



DEPTH (feet)	SAMPLES			DESCRIPTION NAME (USCS): color, moist, % by wt., plast. density, structure, cementation, react. w/HCl, geo. inter.	PID READING (ppm)	REMARKS
	Sample No.	Sample	Blows/ 6 inches			
32				POORLY GRADED GRAVEL with SAND (GP): continued		
33				POORLY GRADED SAND with GRAVEL (SP): grayish brown (2.5Y 5/2), moist, ~60% fine to coarse sand, ~40% gravel, trace fines		
34						
35	PIZB-04-35					
36						
37						
38				~55% fine to coarse sand, ~45% gravel, trace fines		
39						
40	PIZB-04-40					
41						
42						
43						
44						
45	PIZB-04-45					
46						
47						
48				POORLY GRADED GRAVEL with SAND (GP): see next page		

DEPTH (feet)	SAMPLES			DESCRIPTION NAME (USCS): color, moist, % by wt., plast. density, structure, cementation, react. w/HCl, geo. inter.	PID READING (ppm)	REMARKS
	Sample No.	Sample	Blows/ 6 inches			
49				POORLY GRADED GRAVEL with SAND (GP): grayish brown (2.5Y 5/2), moist, ~70% gravel, ~30% fine to coarse sand, trace fines		
50	PIZB-04-50					
51				Bottom of boring at 50.5 ft bgs		Boring backfilled with bentonite chips and continuously hydrated Surface patched with asphalt
52						
53						
54						
55						
56						
57						
58						
59						
60						
61						
62						
63						
64						
65						

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PROJECT: AZUSA/IRWINDALE STUDY AREA Azusa and Irwindale, California					Log of Boring No. PIZB-04A					
BORING LOCATION: PerkinElmer					ELEVATION AND DATUM 566.71 ft msl (NAVD 88)					
DRILLING CONTRACTOR: Layne Christenson, Co.					DATE STARTED: 2/28/06		DATE FINISHED 3/1/06			
DRILLING METHOD: Dual Wall Air Percussion					TOTAL DEPTH (ft.) 50.5		MEASURING POINT. Ground surface			
DRILLING EQUIPMENT: Foremost Drills AP-1000					DEPTH TO WATER		FIRST NA		COMPL. NA	
SAMPLING METHOD: Cuttings from cyclone					LOGGED BY: P. Jeffers					
HAMMER WEIGHT: NA			DROP: NA		RESPONSIBLE PROFESSIONAL: G. Rees				REG. NO. 6612	

DEPTH (feet)	SAMPLES			DESCRIPTION NAME (USCS), color, moist, % by wt., plast. density, structure, cementation, react. w/HCl, geo. inter.	PID READING (ppm)	REMARKS
	Sample No.	Sample	Blows/ 6 inches			
				Surface Elevation: 566.71 ft msl (NAVD 88)		
				~3" asphalt		
				SEE BORING LOG FOR PIZB-04 (located approximately 5 feet north) FOR LITHOLOGY TO 50.5' bgs		
1						Hand augered to 2.5 feet below ground surface (bgs)
2						Drilled to 100.5' bgs with 9" casing and hammer bit
3						Drilled continuously to 60' bgs, begin collecting samples at 60' bgs
4						Lithology assessed from cuttings collected through the cyclone
5						
6						
7						
8						
9						
10						
11						
12						
13						
14						

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Project No 7190.005 0

Page 1 of 7

RMRK3

PROJECT: AZUSA/IRWINDALE STUDY AREA
Azusa and Irwindale, California

Log of Boring No. PIZB-04A (cont'd)

DEPTH (feet)	SAMPLES			DESCRIPTION NAME (USCS): color, moist, % by wt., plast. density, structure, cementation, react. w/HCl, geo. inter	PID READING (ppm)	REMARKS
	Sample No.	Sample	Blows/ 6 inches			
15				SEE BORING LOG FOR PIZB-04 (located approximately 5 feet north) FOR LITHOLOGY TO 50.5' bgs		
16						
17						
18						
19						
20						
21						
22						
23						
24						
25						
26						
27						
28						
29						
30						
31						

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Project No 7190 005 0

Page 2 of 7

PROJECT: AZUSA/IRWINDALE STUDY AREA
Azusa and Irwindale, California

Log of Boring No. PIZB-04A (cont'd)

DEPTH (feet)	SAMPLES			DESCRIPTION NAME (USCS): color, moist, % by wt., plast. density, structure, cementation, react. w/HCl, geo. inter.	PID READING (ppm)	REMARKS
	Sample No.	Sample	Blows/ 6 inches			
32				SEE BORING LOG FOR PIZB-04 (located approximately 5 feet north) FOR LITHOLOGY TO 50.5' bgs		
33						
34						
35						
36						
37						
38						
39						
40						
41						
42						
43						
44						
45						
46						
47						
48						

RMRK3



Geomatrix Consultants

Project No. 7190.005.0

Page 3 of 7

PROJECT: AZUSA/IRWINDALE STUDY AREA
Azusa and Irwindale, California

Log of Boring No. PIZB-04A (cont'd)

DEPTH (feet)	SAMPLES			DESCRIPTION NAME (USCS): color, moist, % by wt., plast. density, structure, cementation, react. w/HCl, geo. inter.	PID READING (ppm)	REMARKS
	Sample No.	Sample	Blows/ 6 inches			
49				SEE BORING LOG FOR PIZB-04 (located approximately 5 feet north) FOR LITHOLOGY TO 50.5' bgs		
50						
51						
52						
53						
54						
55						
56						
57						
58						
59				POORLY GRADED GRAVEL with SAND (GP): light yellowish brown (2.5Y 6/3), moist, ~85% gravel, ~15% fine to coarse sand		
60	PIZB- 04A- 60					
61						
62						
63						
64						
65						

RMRK3



Geomatrix Consultants

Project No. 7190.005.0

Page 4 of 7

PROJECT: AZUSA/IRWINDALE STUDY AREA
Azusa and Irwindale, California

Log of Boring No. PIZB-04A (cont'd)

DEPTH (feet)	SAMPLES			DESCRIPTION NAME (USCS): color, moist, % by wt., plast. density, structure, cementation, react. w/HCl, geo. inter.	PID READING (ppm)	REMARKS
	Sample No.	Sample	Blows/ 6 inches			
66				POORLY GRADED GRAVEL with SAND (GP): continued		
67				POORLY GRADED SAND with GRAVEL (SP): light yellowish brown (2.5Y 6/3), moist, ~85% fine to coarse sand, ~15% gravel, trace fines		
68						
69						
70	PIZB- 04A- 70					
71						
72						
73						
74						
75				POORLY GRADED GRAVEL with SAND (GP): light yellowish brown (2.5Y 6/3), moist, ~80% gravel, ~20% fine to coarse sand, trace fines		
76						
77						
78						
79						
80	PIZB- 04A- 80					
81						
82						

RMRK3



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Project No. 7190.005.0

Page 5 of 7

PROJECT: AZUSA/IRWINDALE STUDY AREA
Azusa and Irwindale, California

Log of Boring No. PIZB-04A (cont'd)

DEPTH (feet)	SAMPLES			DESCRIPTION NAME (USCS): color, moist, % by wt., plast. density, structure, cementation, react. w/HCl, geo. inter.	PID READING (ppm)	REMARKS
	Sample No.	Sample	Blows/ 6 inches			
83				POORLY GRADED GRAVEL with SAND (GP): continued		
84						
85						
86						
87						
88						
89						
90	PIZB-04A-90					
91						
92						
93						
94						
95				~85% gravel, ~15% fine to coarse sand		
96						
97						
98						
99				~75% gravel, ~25% fine to coarse sand		



Geomatrix Consultants

Project No. 7190.005.0

Page 6 of 7

RMRK3

PROJECT: AZUSA/IRWINDALE STUDY AREA
Azusa and Irwindale, California

Log of Boring No. PIZB-04A (cont'd)

DEPTH (feet)	SAMPLES			DESCRIPTION NAME (USCS): color, moist, % by wt., plast. density, structure, cementation, react. w/HCl, geo. inter.	PID READING (ppm)	REMARKS
	Sample No.	Sample	Blows/ 6 inches			
100	PIZB-04A-100			POORLY GRADED GRAVEL with SAND (GP): continued		Boring backfilled with bentonite chips and continuously hydrated Surface patched with asphalt
101				Bottom of boring at 100.5 ft bgs		
102						
103						
104						
105						
106						
107						
108						
109						
110						
111						
112						
113						
114						
115						
116						

RMRK3



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Project No. 7190.005.0

Page 7 of 7

PROJECT: AZUSA/IRWINDALE STUDY AREA Azusa and Irwindale, California				Log of Boring No. PIZB-05			
BORING LOCATION: PerkinElmer AOC				ELEVATION AND DATUM: 567.78 ft msl (NAVD 88)			
DRILLING CONTRACTOR: Layne Christenson, Co.				DATE STARTED: 2/24/06		DATE FINISHED: 2/24/06	
DRILLING METHOD: Dual Wall Air Percussion				TOTAL DEPTH (ft.): 100.5		MEASURING POINT: Ground surface	
DRILLING EQUIPMENT: Foremost Drills AP-1000				DEPTH TO WATER	FIRST NA	COMPL. NA	24 HRS. NA
SAMPLING METHOD: Cuttings from cyclone or as noted in remarks				LOGGED BY: K. Zeiler/P. Jeffers			
HAMMER WEIGHT: NA		DROP: NA		RESPONSIBLE PROFESSIONAL: G. Rees			REG. NO. 6612

DEPTH (feet)	SAMPLES			DESCRIPTION <small>NAME (USCS): color, moist, % by wt., plast. density, structure, cementation, react. w/HCl, geo. inter.</small>	PID READING (ppm)	REMARKS
	Sample No.	Sample	Blows/ 6 inches			
				Surface Elevation: 567.78 ft msl (NAVD 88)		
				~3" asphalt		
1	PIZB-05-1					Air knifed to 5 feet below ground surface (bgs) by BC² Environmental on 2/22/06
2						
3	PIZB-05-2.5					1' and 2.5' samples collected from sidewalls of boring, and 5' sample with a hand auger on 2/22/06
4						Drilled to 100.5' bgs with 9" casing and hammer bit
5	PIZB-05-5					Lithology assessed from cuttings collected through the cyclone
6				POORLY GRADED GRAVEL with SAND (GP): grayish brown (10YR 5/2), moist, ~85% gravel, ~15% fine to coarse sand, trace fines		
7						
8	PIZB-05-7.5					
9				~70% gravel, ~30% fine to coarse sand, trace fines		
10	PIZB-05-10					
11						
12				~80% gravel, ~20% fine to coarse sand, trace fines		
13						
14						



DEPTH (feet)	SAMPLES			DESCRIPTION NAME (USCS): color, moist, % by wt., plast. density, structure, cementation, react. w/HCl, geo. inter.	PID READING (ppm)	REMARKS
	Sample No.	Sample	Blows/ 6 inches			
15	PIZB-05-15			POORLY GRADED GRAVEL with SAND (GP): continued		
16						
17						
18				~70% gravel, ~30% fine to coarse sand, trace fines		
19						
20	PIZB-05-20					
21						
22						
23				~60% gravel, ~40% fine to coarse sand, trace fines		
24						
25	PIZB-05-25					
26						
27						
28				~65% gravel, ~35% fine to coarse sand, trace fines		
29						
30	PIZB-05-30					
31						

DEPTH (feet)	SAMPLES			DESCRIPTION NAME (USCS): color, moist, % by wt., plast. density, structure, cementation, react. w/HCl, geo. inter.	PID READING (ppm)	REMARKS
	Sample No.	Sample	Blows/ 6 inches			
32				POORLY GRADED GRAVEL with SAND (GP): continued		
33				yellowish brown (10RY 5/4), ~55% gravel, ~45% fine to coarse sand, trace fines		
34						
35	PIZB-05-35					
36						
37						
38				POORLY GRADED GRAVEL (GP): brown (10YR 5/3), moist, ~95% gravel, ~5% fine to coarse sand, trace fines		
39						
40	PIZB-05-40					
41						
42						
43				POORLY GRADED GRAVEL with SAND (GP): brown (10YR 5/3), moist, ~70% gravel, ~30% fine to coarse sand, trace fines		
44						
45	PIZB-05-45					
46						
47						
48				~60% gravel, ~40% fine to coarse sand, trace fines		

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DEPTH (feet)	SAMPLES			DESCRIPTION NAME (USCS): color, moist, % by wt., plast. density, structure, cementation, react. w/HCl, geo. inter.	PID READING (ppm)	REMARKS
	Sample No.	Sample	Blows/ 6 inches			
49				POORLY GRADED GRAVEL with SAND (GP): continued		
50	PIZB-05-50					
51						
52						
53						
54						
55						
56						
57						
58						
59				POORLY GRADED SAND with GRAVEL (SP): brown (10YR 5/3), moist, ~65% fine to coarse sand, ~35% gravel, trace fines		
60	PIZB-05-60					
61						
62						
63						
64						
65						

RMRK3



PROJECT: AZUSA/IRWINDALE STUDY AREA
Azusa and Irwindale, California

Log of Boring No. PIZB-05 (cont'd)

DEPTH (feet)	SAMPLES			DESCRIPTION NAME (USCS): color, moist, % by wt., plast. density, structure, cementation, react. w/HCl, geo. inter.	PID READING (ppm)	REMARKS
	Sample No.	Sample	Blows/ 6 inches			
66				POORLY GRADED GRAVEL with SAND (GP): brown (10YR 5/3), moist, ~60% gravel, ~40% fine to coarse sand, trace fines		Gravel/sand contact at 65' bgs
67						
68						
69						
70	PIZB-05-70					
71						
72						
73						
74						
75						
76				~65% gravel, ~35% fine to coarse sand, trace fines ↓		
77						
78						
79						
80	PIZB-05-80					
81						
82						

RMRK3



Geomatrix Consultants

Project No. 7190.005.0

Page 5 of 7

DEPTH (feet)	SAMPLES			DESCRIPTION NAME (USCS): color, moist, % by wt., plast. density, structure, cementation, react. w/HCl, geo. inter.	PID READING (ppm)	REMARKS
	Sample No.	Sample	Blows/ 6 inches			
83				POORLY GRADED GRAVEL with SAND (GP): continued		
84						
85				~70% gravel, ~30% fine to coarse sand, trace fines		
86						
87						
88						
89						
90	PIZB-05-90					
91						
92						
93						
94						
95				POORLY GRADED SAND with GRAVEL (SP): dark yellowish brown (10YR 4/4), moist, ~75% fine to coarse sand, ~25% gravel, trace fines		
96						
97						
98						
99						

RMRK3



PROJECT: AZUSA/IRWINDALE STUDY AREA
Azusa and Irwindale, California

Log of Boring No. PIZB-05 (cont'd)

DEPTH (feet)	SAMPLES			DESCRIPTION NAME (USCS): color, moist, % by wt., plast. density, structure, cementation, react. w/HCl, geo. inter.	PID READING (ppm)	REMARKS
	Sample No.	Sample	Blows/ 6 inches			
100	PIZB-05-100			POORLY GRADED SAND with GRAVEL (SP): continued		Boring backfilled with bentonite chips and continuously hydrated Surface patched with asphalt
101				Bottom of boring at 100.5 ft bgs		
102						
103						
104						
105						
106						
107						
108						
109						
110						
111						
112						
113						
114						
115						
116						

RMK3



Geomatrix Consultants

Project No. 7190.005.0

Page 7 of 7

PROJECT: AZUSA/IRWINDALE STUDY AREA Azusa and Irwindale, California					Log of Boring No. PIZB-06				
BORING LOCATION PerkinElmer					ELEVATION AND DATUM: 566.50 ft msl (NAVD 88)				
DRILLING CONTRACTOR: Layne Christenson, Co.					DATE STARTED: 2/22/06		DATE FINISHED 2/23/06		
DRILLING METHOD: Dual Wall Air Percussion/Air Rotary					TOTAL DEPTH (ft): 100.5		MEASURING POINT: Ground surface		
DRILLING EQUIPMENT: Foremost Drills AP-1000/Ingersoll-Rand TH60					DEPTH TO WATER	FIRST NA	COMPL NA	24 HRS. NA	
SAMPLING METHOD: Cuttings from cyclone or as noted in remarks					LOGGED BY: K. Zeiler				
HAMMER WEIGHT: NA			DROP: NA		RESPONSIBLE PROFESSIONAL G. Rees			REG NO. 6612	

DEPTH (feet)	SAMPLES			DESCRIPTION NAME (USCS) color, moist, % by wt., plast density, structure, cementation, react. w/HCl, geo inter	PID READING (ppm)	REMARKS
	Sample No.	Sample	Blows/ 6 inches			
				Surface Elevation: 566.50 ft msl (NAVD 88)		
				~3" asphalt		
1	PIZB-06-1					Air knifed to 5 feet below ground surface (bgs) by BC ² Environmental
2						1' and 2.5' samples collected from sidewalls of boring, and 5' sample with a hand auger
3	PIZB-06-2.5					Drilled to 56' bgs with 5" casing and rotary bit Pulled rotay casing and drilled from 56' bgs to 100.5' bgs with 9" casing and hammer bit
4						
5	PIZB-06-5					Lithology assessed from cuttings collected through the cyclone
6						
7				POORLY GRADED GRAVEL with SAND (GP): grayish brown (2.5Y 5/2), moist, ~85% gravel, ~15% fine to coarse sand, trace fines		
8	PIZB-06-7.5			~85% fine to coarse sand, ~15% gravel, trace fines		
9				POORLY GRADED GRAVEL (GP): grayish brown (2.5Y 5/2), moist, ~95% gravel, ~5% fine to coarse sand, trace fines		
10	PIZB-06-10					
11						
12						
13						
14						



DEPTH (feet)	SAMPLES			DESCRIPTION NAME (USCS): color, moist, % by wt., plast. density, structure, cementation, react. w/HCl, geo. inter.	PID READING (ppm)	REMARKS
	Sample No.	Sample	Blows/ 6 inches			
15	PIZB-06-15			POORLY GRADED GRAVEL (GP): continued		
16						
17						
18				POORLY GRADED GRAVEL with SAND (GP): grayish brown (2.5Y 5/2), moist, ~85% gravel, ~15% fine to coarse sand, trace fines		
19						
20	PIZB-06-20					
21						
22						
23				~65% gravel, ~35% fine to coarse sand, trace fines		
24						
25	PIZB-06-25					
26						
27						
28						
29						
30	PIZB-06-30					
31						

RMRK3



PROJECT: AZUSA/IRWINDALE STUDY AREA
Azusa and Irwindale, California

Log of Boring No. PIZB-06 (cont'd)

DEPTH (feet)	SAMPLES			DESCRIPTION NAME (USCS): color, moist, % by wt., plast. density, structure, cementation, react. w/HCl, geo. inter.	PID READING (ppm)	REMARKS
	Sample No.	Sample	Blows/ 6 inches			
32				POORLY GRADED GRAVEL with SAND (GP): continued		
33				~55% gravel, ~45% fine to coarse sand, trace fines		
34						
35	PIZB-06-35					
36						
37						
38				POORLY GRADED SAND with GRAVEL (SP): grayish brown (10YR 5/2), moist, ~70% fine to coarse sand, ~30% gravel, trace fines		
39						
40	PIZB-06-40					
41						
42						
43				POORLY GRADED GRAVEL with SAND (GP): grayish brown (2.5Y 5/2), moist, ~80% gravel, ~20% fine to coarse sand, trace fines		
44						
45	PIZB-06-45					
46						
47						
48				POORLY GRADED SAND with SILT (SP-SM): see next page		

RMRK3



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Project No. 7190 005.0

Page 3 of 7

Log of Boring No. PIZB-06 (cont'd)

DEPTH (feet)	SAMPLES			DESCRIPTION NAME (USCS): color, moist, % by wt., plast. density, structure, cementation, react w/HCl, geo. inter.	PID READING (ppm)	REMARKS
	Sample No	Sample	Blows/ 6 inches			
49				POORLY GRADED SAND with SILT (SP-SM): light yellowish brown (25.Y 6/4), moist, ~85% fine to coarse sand, ~10% nonplastic fines, ~5% gravel		Difficult drilling
50	PIZB-06-50					
51						
52						
53						
54						
55						
56						
57						
58						
59				POORLY GRADED SAND with GRAVEL (SP): yellowish brown (10YR 5/4), moist, ~65% fine to coarse sand, ~35% gravel, trace fines		
60	PIZB-06-60					
61						
62						
63						
64						
65						

RMRK3



PROJECT: AZUSA/IRWINDALE STUDY AREA
Azusa and Irwindale, California

Log of Boring No. PIZB-06 (cont'd)

DEPTH (feet)	SAMPLES			DESCRIPTION NAME (USCS): color, moist, % by wt., plast density, structure, cementation, react. w/HCl, geo. inter.	PID READING (ppm)	REMARKS
	Sample No.	Sample	Blows/ 6 inches			
66				POORLY GRADED GRAVEL with SAND (GP): brown (10YR 5/3), moist, ~85% gravel, ~15% fine to coarse sand, trace fines		
67						
68						
69						
70	PIZB-06-70					
71						
72						
73						
74						
75						
75				yellowish brown (10YR 5/4), ~60% gravel, ~49% fine to coarse sand, trace fines		
76						
77						
78						
79						
80	PIZB-06-80					
81						
82						

RMRK3



Geomatrix Consultants

Project No. 7190.005.0

Page 5 of 7

DEPTH (feet)	SAMPLES			DESCRIPTION NAME (USCS): color, moist, % by wt., plast. density, structure, cementation, react. w/HCl, geo. inter.	PID READING (ppm)	REMARKS
	Sample No.	Sample	Blows/ 6 inches			
83				POORLY GRADED GRAVEL with SAND (GP): continued		
84						
85				POORLY GRADED SAND with GRAVEL (SP): dark yellowish brown (10YR 4/4), moist, ~75% fine to coarse sand, ~25% gravel, trace fines		
86						
87						
88						
89						
90	PIZB- 06- 90					
91						
92						
93						
94						
95				~65% fine to coarse sand, ~35% gravel, trace fines ↓		
96						
97						
98						
99						



PROJECT: AZUSA/IRWINDALE STUDY AREA
Azusa and Irwindale, California

Log of Boring No. PIZB-06 (cont'd)

DEPTH (feet)	SAMPLES			DESCRIPTION NAME (USCS): color, moist, % by wt., plast. density, structure, cementation, react. w/HCl, geo. inter.	PID READING (ppm)	REMARKS
	Sample No.	Sample	Blows/ 6 inches			
100	PIZB-06-100			POORLY GRADED SAND with GRAVEL (SP): continued		Boring backfilled with bentonite chips and continuously hydrated Surface patched with asphalt
101				Bottom of boring at 100.5 ft bgs		
102						
103						
104						
105						
106						
107						
108						
109						
110						
111						
112						
113						
114						
115						
116						

RMRK3



Geomatrix Consultants

Project No. 7190.005.0

Page 7 of 7

PROJECT: AZUSA/IRWINDALE STUDY AREA Azusa and Irwindale, California		Log of Boring No. PSZB-21	
BORING LOCATION: PerkinElmer		ELEVATION AND DATUM: 569.08 ft msl (NAVD 88)	
DRILLING CONTRACTOR: Layne Christenson, Co.		DATE STARTED: 3/21/05	DATE FINISHED: 3/21/05
DRILLING METHOD: Dual Wall Air Percussion		TOTAL DEPTH (ft.): 30.5	MEASURING POINT: Ground surface
DRILLING EQUIPMENT: Foremost Drills AP-1000		DEPTH TO WATER	FIRST NA COMPL. NA 24 HRS. NA
SAMPLING METHOD: Cuttings from cyclone		LOGGED BY: P. Jeffers	
HAMMER WEIGHT: NA	DROP: NA	RESPONSIBLE PROFESSIONAL: G. Rees	REG. NO. 6612

DEPTH (feet)	SAMPLES			DESCRIPTION NAME (USCS): color, moist, % by wt., plast. density, structure, cementation, react. w/HCl, geo. inter.	PID READING (ppm)	REMARKS
	Sample No.	Sample	Blows/ 6 inches			
				Surface Elevation: 569.08 ft msl (NAVD 88)		
				~4" asphalt		
1	PSZB-21-1			POORLY GRADED GRAVEL with SAND (GP): dark brown (2.5YR 3/2), moist, ~70% gravel, ~30% fine sand		Hand augered to 3 feet below ground surface (bgs)
2						Drilled to 30.5' bgs with 9" casing and hammer bit
3	PSZB-21-2.5					Lithology assessed from cuttings collected through the cyclone
4				SILTY GRAVEL with SAND (GM): light gray (N 7/), moist, ~60% gravel, ~20% fine sand, ~ 20% nonplastic fines		
5	PSZB-21-5					
6						
7						
8	PSZB-21-7.5					
9						
10	PSZB-21-10			light brown (7.5YR 5/4)		
11						
12						
13				POORLY GRADED GRAVEL with SAND (GP): light gray (N 7/), moist, ~80% gravel, ~20% fine to medium sand		
14						

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Project No. 7190.004.0

Page 1 of 2

DEPTH (feet)	SAMPLES			DESCRIPTION NAME (USCS): color, moist, % by wt., plast. density, structure, cementation, react. w/HCl, geo. inter.	PID READING (ppm)	REMARKS
	Sample No.	Sample	Blows/ 6 inches			
15	PSZB-21-15			POORLY GRADED GRAVEL with SAND (GP): continued		
16						
17						
18						
19						
20	PSZB-21-20			light brown (7.5YR 5/4), ~85% gravel, ~15% medium sand		
21						
22						
23				POORLY GRADED SAND with GRAVEL (SP): medium brown (10YR 5/3), moist, ~85% fine to medium sand, ~15% gravel		
24						
25	PSZB-21-25					
26						
27						
28				SILTY GRAVEL with SAND (GM): light gray (N 7/), moist, ~70% gravel, ~15% fine sand, ~15% nonplastic fines		
29						
30	PSZB-21-30					Boring backfilled with bentonite chips hydrated in place after each 5' lift Surface patched with asphalt
31				Bottom of boring at 30.5 ft bgs		

RMK3



PROJECT: AZUSA/IRWINDALE STUDY AREA Azusa and Irwindale, California				Log of Boring No. PSZB-22			
BORING LOCATION: PerkinElmer				ELEVATION AND DATUM: 569.40 ft msl (NAVD 88)			
DRILLING CONTRACTOR: Layne Christenson, Co.				DATE STARTED: 3/21/05		DATE FINISHED: 3/21/05	
DRILLING METHOD: Dual Wall Air Percussion				TOTAL DEPTH (ft.): 30.5		MEASURING POINT: Ground surface	
DRILLING EQUIPMENT: Foremost Drills AP-1000				DEPTH TO WATER		FIRST NA	
SAMPLING METHOD: Cuttings from cyclone				LOGGED BY: P. Jeffers		COMPL. NA	
HAMMER WEIGHT: NA				DROP: NA		RESPONSIBLE PROFESSIONAL: G. Rees	
						REG. NO. 6612	

DEPTH (feet)	SAMPLES			DESCRIPTION	PID READING (ppm)	REMARKS
	Sample No.	Sample	Blows/ 6 inches	NAME (USCS): color, moist, % by wt., plast. density, structure, cementation, react. w/HCl, geo. inter.		
				Surface Elevation: 569.40 ft msl (NAVD 88)		
1	PSZB 22-1			~4" asphalt POORLY GRADED GRAVEL with SAND (GP): dark brown (2.5YR 3/2), moist, ~75% gravel, ~25% medium sand		Hand augered to 3 feet below ground surface (bgs) Drilled to 30.5' bgs with 9" casing and hammer bit
2						
3	PSZB 22-2.5					Lithology assessed from cuttings collected through the cyclone
4				SILTY GRAVEL with SAND (GM): light gray (N 7/), moist, ~70% gravel, ~15% fine sand, ~15% nonplastic fines		
5	PSZB 22-5					
6						
7						
8				POORLY GRADED GRAVEL with SAND (GP): light gray (N 7/), moist, ~85% gravel, ~15% fine sand		
9						
10	PSZB 22-10					
11						
12						
13						
14						



DEPTH (feet)	SAMPLES			DESCRIPTION NAME (USCS): color, moist, % by wt., plast. density, structure, cementation, react. w/HCl, geo. inter.	PID READING (ppm)	REMARKS
	Sample No.	Sample Blows/ 6 inches				
15	PSZB 22-15			gray (N 6/), ~70% gravel, ~30% fine sand		
16						
17						
18				SILTY GRAVEL (GM): light brown (7.5YR 6/3), moist, ~70% gravel, ~15% fine to medium sand, ~15% nonplastic fines		
19						
20	PSZB 22-20					
21						
22						
23						
24						
25				POORLY GRADED GRAVEL with SAND (GP): medium brown (7.5YR 4/4), moist, ~80% gravel, ~20% fine to medium sand		No recovery at 25' bgs
26						
27						
28						
29						
30	PSZB 22-30					Boring backfilled with bentonite chips hydrated in place after each 5' lift Surface patched with asphalt
31				Bottom of boring at 30.5 ft bgs		

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PROJECT: AZUSA/IRWINDALE STUDY AREA Azusa and Irwindale, California				Log of Boring No. PSZB-23			
BORING LOCATION: PerkinElmer				ELEVATION AND DATUM: 568.45 ft msl (NAVD 88)			
DRILLING CONTRACTOR: Layne Christenson, Co.				DATE STARTED: 3/21/05		DATE FINISHED: 3/21/05	
DRILLING METHOD: Dual Wall Air Percussion				TOTAL DEPTH (ft.): 30.0		MEASURING POINT: Ground surface	
DRILLING EQUIPMENT: Foremost Drills AP-1000				DEPTH TO WATER	FIRST NA	COMPL. NA	24 HRS. NA
SAMPLING METHOD: Cuttings from cyclone				LOGGED BY: P. Jeffers			
HAMMER WEIGHT: NA		DROP: NA		RESPONSIBLE PROFESSIONAL: G. Rees			REG. NO. 6612

DEPTH (feet)	SAMPLES			DESCRIPTION NAME (USCS): color, moist, % by wt., plast. density, structure, cementation, react. w/HCl, geo. inter.	PID READING (ppm)	REMARKS
	Sample No.	Sample	Blows/ 6 inches			
				Surface Elevation: 568.45 ft msl (NAVD 88)		
1	PSZB 23-1			~4" asphalt POORLY GRADED GRAVEL with SAND (GP): dark brown (7.5YR 3/2), moist, ~70% gravel, ~30% fine to medium sand		Hand augered to 3 feet below ground surface (bgs) Drilled to 30' bgs with 9" casing and hammer bit Lithology assessed from cuttings collected through the cyclone
2						
3	PSZB 23-2.5					
4						
5	PSZB 23-5			light brown (7.5YR 6/3), ~75% gravel, ~25% fine to medium sand		
6						
7						
8	PSZB 23-7.5					
9						
10				gravel and granitic cobbles, broken clasts of granite 2"-3" in diameter		No recovery at 10' bgs
11						
12						
13						
14						



DEPTH (feet)	SAMPLES			DESCRIPTION NAME (USCS): color, moist, % by wt., plast. density, structure, cementation, react. w/HCl, geo. inter.	PID READING (ppm)	REMARKS
	Sample No.	Sample	Blows/ 6 inches			
15	PSZB 23-15			POORLY GRADED GRAVEL with SAND (GP): continued brown (7.5YR 5/3), ~70% gravel, ~30% fine to medium sand		
16						
17						
18						
19						
20	PSZB 23-20			light brown (7.5YR 6/3), ~75% gravel, ~25% fine to medium sand		
21						
22						
23						
24						
25	PSZB 23-25					
26						
27						
28						
29						Boring backfilled with bentonite chips hydrated in place after each 5' lift Surface patched with asphalt
30				gravel and granitic cobbles, broken clasts of granite 2"-4" in diameter Bottom of boring at 30 ft bgs		No recovery at 30' bgs
31						



PROJECT: AZUSA/IRWINDALE STUDY AREA Azusa and Irwindale, California					Log of Boring No. PSZB-24			
BORING LOCATION: PerkinElmer.					ELEVATION AND DATUM: 567.06 ft msl (NAVD 88)			
DRILLING CONTRACTOR: Layne Christenson, Co.					DATE STARTED: 3/22/05		DATE FINISHED: 3/22/05	
DRILLING METHOD: Dual Wall Air Percussion					TOTAL DEPTH (ft.): 30.5		MEASURING POINT: Ground surface	
DRILLING EQUIPMENT: Foremost Drills AP-1000					DEPTH TO WATER	FIRST NA	COMPL. NA	24 HRS. NA
SAMPLING METHOD: Cuttings from cyclone					LOGGED BY: P. Jeffers			
HAMMER WEIGHT: NA			DROP: NA		RESPONSIBLE PROFESSIONAL: G. Rees			REG. NO. 6612

DEPTH (feet)	SAMPLES			DESCRIPTION	PID READING (ppm)	REMARKS
	Sample No.	Sample	Blows/ 6 inches	NAME (USCS): color, moist, % by wt., plast. density, structure, cementation, react. w/HCl, geo. inter.		
				Surface Elevation: 567.06 ft msl (NAVD 88)		
1	PSZB 24-1			~4" asphalt POORLY GRADED SAND with GRAVEL (SP): dark brown (10YR 3/3), moist, ~80% medium to coarse sand, ~20% fine gravel		Hand augered to 2 feet below ground surface (bgs)
2						Drilled to 30.5' bgs with 9" casing and hammer bit
3	PSZB 24-2 5					Lithology assessed from cuttings collected through the cyclone
4				POORLY GRADED GRAVEL with SAND (GP): dark brown (10YR 3/3), moist, ~85% gravel, ~15% medium to coarse sand		
5	PSZB 24-5					
6						
7						
8						
9						
10	PSZB 24-10			brown (10YR 5/3) ↓		
11						
12						
13				POORLY GRADED SAND with GRAVEL (SP): yellowish brown (10YR 5/4), moist, ~85% medium to coarse sand, ~15% gravel		
14						



DEPTH (feet)	SAMPLES			DESCRIPTION NAME (USCS): color, moist, % by wt., plast. density, structure, cementation, react. w/HCl, geo. inter.	PID READING (ppm)	REMARKS
	Sample No.	Sample Blows/ 6 inches				
15	PSZB 24-15			POORLY GRADED SAND with GRAVEL (SP): continued		
16						
17						
18				SILTY SAND with GRAVEL (SM): yellowish brown (10YR 5/4), moist, ~60% fine to coarse sand, ~15% gravel, ~15% nonplastic fines		
19						
20	PSZB 24-20					
21						
22						
23						
24						
25	PSZB 24-25					
26						
27						
28						
29						
30	PSZB 24-30					Boring backfilled with bentonite chips hydrated in place after each 5' lift Surface patched with asphalt
31				Bottom of boring at 30.5 ft bgs		

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PROJECT: AZUSA/IRWINDALE STUDY AREA Azusa and Irwindale, California				Log of Boring No. PSZB-25			
BORING LOCATION: PerkinElmer				ELEVATION AND DATUM: 564.22 ft msl (NAVD 88)			
DRILLING CONTRACTOR: Layne Christenson, Co.				DATE STARTED: 3/29/05		DATE FINISHED: 3/29/05	
DRILLING METHOD: Dual Wall Air Percussion				TOTAL DEPTH (ft.): 30.5		MEASURING POINT: Ground surface	
DRILLING EQUIPMENT: Foremost Drills AP-1000				DEPTH TO WATER	FIRST NA	COMPL. NA	24 HRS. NA
SAMPLING METHOD: Cuttings from cyclone				LOGGED BY: P. Jeffers			
HAMMER WEIGHT: NA		DROP: NA		RESPONSIBLE PROFESSIONAL: G. Rees			REG. NO. 6612

DEPTH (feet)	SAMPLES			DESCRIPTION	PID READING (ppm)	REMARKS
	Sample No.	Sample	Blows/ 6 inches	NAME (USCS): color, moist, % by wt., plast. density, structure, cementation, react. w/HCl, geo. inter.		
				Surface Elevation: 564.22 ft msl (NAVD 88)		
				~4" asphalt		
1	PSZB 25-1			POORLY GRADED GRAVEL with SAND (GP): dark brown (7.5YR 3/4), moist, ~65% gravel, ~35% medium to coarse sand		Hand augered to 2 feet below ground surface (bgs)
2						Drilled to 30.5' bgs with 9" casing and hammer bit
3	PSZB 25-2 5					Lithology assessed from cuttings collected through the cyclone
4						
5	PSZB 25-5			light brown (7.5YR 6/3), ~85% gravel, ~15% medium to coarse sand		
6						
7						
8	PSZB 25-7 5					
9						
10	PSZB 25-10			light gray (10YR 7/1), ~70% gravel, ~30% fine to medium sand		
11						
12						
13						
14						



DEPTH (feet)	SAMPLES			DESCRIPTION NAME (USCS): color, moist, % by wt., plast. density, structure, cementation, react. w/HCl, geo. inter.	PID READING (ppm)	REMARKS
	Sample No.	Sample	Blows/ 6 inches			
15	PSZB 25-15			POORLY GRADED GRAVEL with SAND (GP): continued ~60% gravel, ~40% fine to medium sand		
16						
17						
18						
19						
20	PSZB 25-20			~85% gravel, ~15% fine to medium sand		
21						
22						
23						
24				POORLY GRADED SAND with GRAVEL (SP): light brown (7.5YR 6/3), moist, ~60% fine to medium sand, ~40% gravel		
25	PSZB 25-25					
26						
27						
28				POORLY GRADED GRAVEL with SAND (GP): light brown (7.5YR 6/3), moist, ~65% gravel, ~35% fine to medium sand		
29						
30	PSZB 25-30					Boring backfilled with bentonite chips hydrated in place after each 5' lift Surface patched with asphalt
31				Bottom of boring at 30.5 ft bgs		



PROJECT: AZUSA/IRWINDALE STUDY AREA Azusa and Irwindale, California				Log of Boring No. PSZB-26			
BORING LOCATION: PerkinElmer				ELEVATION AND DATUM: 564.34 ft msl (NAVD 88)			
DRILLING CONTRACTOR: Layne Christenson, Co.				DATE STARTED: 3/30/05		DATE FINISHED: 3/30/05	
DRILLING METHOD: Dual Wall Air Percussion				TOTAL DEPTH (ft.): 30.5		MEASURING POINT: Ground surface	
DRILLING EQUIPMENT: Foremost Drills AP-1000				DEPTH TO WATER	FIRST NA	COMPL. NA	24 HRS. NA
SAMPLING METHOD: Cuttings from cyclone				LOGGED BY: P. Jeffers			
HAMMER WEIGHT: NA		DROP: NA		RESPONSIBLE PROFESSIONAL: G. Rees			REG. NO. 6612

DEPTH (feet)	SAMPLES			DESCRIPTION	PID READING (ppm)	REMARKS
	Sample No.	Sample	Blows/ 6 inches	NAME (USCS): color, moist, % by wt., plast. density, structure, cementation, react. w/HCl, geo. inter.		
				Surface Elevation: 564.34 ft msl (NAVD 88)		
				~4" asphalt		
1	PSZB 26-1			POORLY GRADED GRAVEL with SAND (GP): dark brown (7.5YR 3/4), moist, ~60% gravel, ~40% medium to coarse sand		Hand augered to 2 feet below ground surface (bgs)
2						Drilled to 30.5' bgs with 9" casing and hammer bit
3	PSZB 26-2.5					Lithology assessed from cuttings collected through the cyclone
4						
5	PSZB 26-5			light gray (5Y 7/1), ~85% gravel, ~15% fine to medium sand		
6						
7						
8	PSZB 26-7.5					
9						
10	PSZB 26-10			~70% gravel, ~30% fine to medium sand		
11						
12						
13						
14						



Log of Boring No. PSZB-26 (cont'd)

DEPTH (feet)	SAMPLES			DESCRIPTION NAME (USCS): color, moist, % by wt., plast. density, structure, cementation, react. w/HCl, geo. inter.	PID READING (ppm)	REMARKS
	Sample No.	Sample	Blows/ 6 inches			
15	PSZB 26-15			POORLY GRADED GRAVEL with SAND (GP): continued ~60% gravel, ~40% fine to medium sand		
16						
17						
18						
19						
20	PSZB 26-20					
21						
22				POORLY GRADED SAND with GRAVEL (SP): light brown (7.5YR 6/4), moist, ~75% fine to medium sand, ~25% gravel		
23						
24						
25	PSZB 26-25					
26						
27						
28						
29						
30	PSZB 26-30					Boring backfilled with bentonite chips hydrated in place after each 5' lift Surface patched with asphalt
31				Bottom of boring at 30.5 ft bgs		



PROJECT: AZUSA/IRWINDALE STUDY AREA Azusa and Irwindale, California					Log of Boring No. PSZB-27					
BORING LOCATION: PerkinElmer					ELEVATION AND DATUM: 562.91 ft msl (NAVD 88)					
DRILLING CONTRACTOR: Layne Christenson, Co.					DATE STARTED: 3/23/05		DATE FINISHED: 3/23/05			
DRILLING METHOD: Dual Wall Air Percussion					TOTAL DEPTH (ft.): 20.5		MEASURING POINT: Ground surface			
DRILLING EQUIPMENT: Foremost Drills AP-1000					DEPTH TO WATER		FIRST NA		COMPL. NA	
SAMPLING METHOD: Cuttings from cyclone					LOGGED BY: P. Jeffers		24 HRS. NA			
HAMMER WEIGHT: NA			DROP: NA			RESPONSIBLE PROFESSIONAL: G. Rees			REG. NO. 6612	

DEPTH (feet)	SAMPLES			Blows/ 6 inches	DESCRIPTION	PID READING (ppm)	REMARKS
	Sample No.	Sample	Blows/ 6 inches		NAME (USCS): color, moist, % by wt., plast. density, structure, cementation, react. w/HCl, geo. inter.		
					Surface Elevation: 562.91 ft msl (NAVD 88)		
1	PSZB 27-1				4 asphalt		Hand augered to 2.5 feet below ground surface (bgs)
2					POORLY GRADED GRAVEL with SAND (GP): brown (10YR 5/3), moist, ~70% gravel, ~30% medium to coarse sand		Drilled to 20.5' bgs with 9" casing and hammer bit
3	PSZB 27-2.5						Lithology assessed from cuttings collected through the cyclone
4							
5	PSZB 27-5				light gray (N 7/)		
6							
7							
8	PSZB 27-7.5						
9							
10	PSZB 27-10				~85% gravel, ~15% fine to medium sand		
11							
12					SILTY GRAVEL with SAND (GM): brown (7.5YR 5/4), moist, ~70% gravel, ~15% fine to medium sand, ~15% nonplastic fines		
13							
14							



DEPTH (feet)	SAMPLES			DESCRIPTION NAME (USCS): color, moist, % by wt., plast. density, structure, cementation, react. w/HCl, geo. inter.	PID READING (ppm)	REMARKS
	Sample No.	Sample	Blows/ 6 inches			
15	PSZB 27-15			SILTY GRAVEL with SAND (GM): continued		
16						
17						
18						
19						
20	PSZB 27-20			POORLY GRADED SAND with GRAVEL (SP): brown (7.5YR 5/3), moist, ~70% fine to medium sand, ~30% gravel Bottom of boring at 20.5 ft bgs		Boring backfilled with bentonite chips hydrated in place after each 5' lift Surface patched with asphalt
21						
22						
23						
24						
25						
26						
27						
28						
29						
30						
31						

RMRK3



PROJECT: AZUSA/IRWINDALE STUDY AREA Azusa and Irwindale, California					Log of Boring No. PSZB-27A				
BORING LOCATION: PerkinElmer .					ELEVATION AND DATUM: 562.89 ft msl (NAVD 88)				
DRILLING CONTRACTOR: Layne Christenson, Co.					DATE STARTED: 3/24/05		DATE FINISHED: 3/24/05		
DRILLING METHOD: Dual Wall Air Percussion					TOTAL DEPTH (ft.): 30.5		MEASURING POINT: Ground surface		
DRILLING EQUIPMENT: Foremost Drills AP-1000					DEPTH TO WATER		FIRST NA	COMPL. NA	24 HRS. NA
SAMPLING METHOD: Cuttings from cyclone					LOGGED BY: P. Jeffers				
HAMMER WEIGHT: NA			DROP: NA		RESPONSIBLE PROFESSIONAL: G. Rees			REG. NO. 6612	

DEPTH (feet)	SAMPLES			DESCRIPTION NAME (USCS): color, moist, % by wt., plast. density, structure, cementation, react. w/HCl, geo. inter. Surface Elevation: 562.89 ft msl (NAVD 88)	PID READING (ppm)	REMARKS
	Sample No.	Sample	Blows/ 6 inches			
1						Hand augered to 3 feet below ground surface (bgs)
2						Drilled to 30.5' bgs with 9" casing and hammer bit
3						Lithology assessed from cuttings collected through the cyclone
4						
5						
6						
7						
8						
9						
10						
11						
12						
13						
14						



PROJECT: AZUSA/IRWINDALE STUDY AREA
Azusa and Irwindale, California

Log of Boring No. PSZB-27A (cont'd)

DEPTH (feet)	SAMPLES			DESCRIPTION NAME (USCS): color, moist, % by wt., plast. density, structure, cementation, react. w/HCl, geo. inter.	PID READING (ppm)	REMARKS
	Sample No.	Sample	Blows/ 6 inches			
15				SEE BORING LOG PSZB-27 FOR LITHOLOGY TO 20' BGS		
16						
17						
18						
19						
20				POORLY GRADED GRAVEL with SAND (GP): brown (7.5YR 5/2), moist, ~65% gravel, ~35% fine to medium sand		
21						
22						
23						
24						
25	PSZB 27A- 25					
26						
27						
28						
29						
30	PSZB 27A- 30			SILTY GRAVEL with SAND (GM): light gray (N 7/), moist, ~70% gravel, ~15% fine to medium sand, ~15% nonplastic fines		Boring backfilled with bentonite chips hydrated in place after each 5' lift Surface patched with asphalt
31						
				Bottom of boring at 30.5 ft bgs		

RMRS



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Page 2 of 2

PROJECT: AZUSA/IRWINDALE STUDY AREA Azusa and Irwindale, California				Log of Boring No. PSZB-28			
BORING LOCATION: PerkinElmer				ELEVATION AND DATUM: 564.52 ft msl (NAVD 88)			
DRILLING CONTRACTOR: Layne Christenson, Co.				DATE STARTED: 3/24/05		DATE FINISHED: 3/24/05	
DRILLING METHOD: Dual Wall Air Percussion				TOTAL DEPTH (ft.): 30.5		MEASURING POINT: Ground surface	
DRILLING EQUIPMENT: Foremost Drills AP-1000				DEPTH TO WATER	FIRST NA	COMPL. NA	24 HRS. NA
SAMPLING METHOD: Cuttings from cyclone				LOGGED BY: P. Jeffers			
HAMMER WEIGHT: NA		DROP: NA		RESPONSIBLE PROFESSIONAL: G. Rees			REG. NO. 6612

DEPTH (feet)	SAMPLES			DESCRIPTION	PID READING (ppm)	REMARKS
	Sample No.	Sample	Blows/ 6 inches	NAME (USCS): color, moist, % by wt., plast. density, structure, cementation, react. w/HCl, geo. inter.		
				Surface Elevation: 564.52 ft msl (NAVD 88)		
				~4" asphalt		
1	PSZB 28-1			POORLY GRADED GRAVEL with SAND (GP): dark brown (2.5YR 3/2), moist, ~60% gravel, ~40% medium to coarse sand		Hand augered to 3 feet below ground surface (bgs)
2						Drilled to 30.5' bgs with 9" casing and hammer bit
3	PSZB 28-2.5					Lithology assessed from cuttings collected through the cyclone
4						Difficult drilling 4'-9' bgs
5	PSZB 28-5			~70% gravel, ~30% medium to coarse sand		
6				cobbles 3"-5" in diameter		
7						
8						
9				light gray (N 7/), ~85% gravel, ~15% fine to medium sand		
10	PSZB 28-10					
11						
12						
13						
14						

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Project No. 7190.004.0

Page 1 of 2

RMRK3

DEPTH (feet)	SAMPLES			DESCRIPTION NAME (USCS): color, moist, % by wt., plast. density, structure, cementation, react. w/HCl, geo. inter.	PID READING (ppm)	REMARKS
	Sample No.	Sample	Blows/ 6 inches			
15	PSZB 28-15			POORLY GRADED SAND with GRAVEL (SP): medium brown (10YR 5/3), moist, ~70% fine to coarse sand, ~30% gravel		
16						
17						
18						
19						
20	PSZB 28-20			light gray (N 7/), ~60% fine to coarse sand, ~40% gravel		
21						
22						
23						
24						
25	PSZB 28-25					
26						
27						
28						
29				SILTY GRAVEL with SAND (GM): light gray (N 7/), moist, ~60% gravel, ~20% fine to medium sand, ~20% nonplastic fines		
30	PSZB 28-30					Boring backfilled with bentonite chips hydrated in place after each 5' lift Surface patched with asphalt
31				Bottom of boring at 30.5 ft bgs		

RMK3



PROJECT: AZUSA/IRWINDALE STUDY AREA Azusa and Irwindale, California				Log of Boring No. PSZB-29			
BORING LOCATION: PerkinElmer				ELEVATION AND DATUM: 564.26 ft msl (NAVD 88)			
DRILLING CONTRACTOR: Layne Christenson, Co.				DATE STARTED: 3/24/05		DATE FINISHED: 3/24/05	
DRILLING METHOD: Dual Wall Air Percussion				TOTAL DEPTH (ft.): 30.5		MEASURING POINT: Ground surface	
DRILLING EQUIPMENT: Foremost Drills AP-1000				DEPTH TO WATER	FIRST NA	COMPL. NA	24 HRS. NA
SAMPLING METHOD: Cuttings from cyclone				LOGGED BY: P. Jeffers			
HAMMER WEIGHT: NA		DROP: NA		RESPONSIBLE PROFESSIONAL: G. Rees			REG. NO. 6612

DEPTH (feet)	SAMPLES			DESCRIPTION	PID READING (ppm)	REMARKS
	Sample No.	Sample	Blows/ 6 inches	NAME (USCS): color, moist, % by wt., plast. density, structure, cementation, react. w/HCl, geo. inter.		
				Surface Elevation: 564.26 ft msl (NAVD 88)		
1	PSZB 29-1			~4" asphalt POORLY GRADED GRAVEL with SAND (GP): dark brown (7.5YR 4/4), moist, ~60% gravel, ~40% medium to coarse sand		Hand augered to 2.5 feet below ground surface (bgs) Drilled to 30.5' bgs with 9" casing and hammer bit
2						
3	PSZB 29-2.5					Lithology assessed from cuttings collected through the cyclone
4						
5	PSZB 29-5			brown (7.5YR 5/2), ~75% gravel, ~25% medium to coarse sand		
6						
7						
8	PSZB 29-7.5					
9						
10	PSZB 29-10			~80% gravel, ~20% fine to medium sand		
11						
12						
13						
14				POORLY GRADED SAND with GRAVEL (SP): see next page		



DEPTH (feet)	SAMPLES			DESCRIPTION NAME (USCS): color, moist, % by wt., plast. density, structure, cementation, react. w/HCl, geo. inter.	PID READING (ppm)	REMARKS
	Sample No.	Sample	Blows/ 6 inches			
15	PSZB 29-15			POORLY GRADED SAND with GRAVEL (SP): medium brown (10YR 5/3), moist, ~75% fine to coarse sand, ~25% gravel		
16						
17						
18						
19						
20	PSZB 29-20			~85% fine to coarse sand, ~15% gravel		
21						
22						
23						
24						
25	PSZB 29-25			light gray (7.5YR 7/1)		
26						
27						
28				POORLY GRADED GRAVEL with SAND (GP): light gray (N 7/), moist, ~80% gravel, ~20% fine to medium sand		
29						
30	PSZB 29-30					Boring backfilled with bentonite chips hydrated in place after each 5' lift Surface patched with asphalt
31				Bottom of boring at 30.5 ft bgs		

RMRK3



PROJECT: AZUSA/IRWINDALE STUDY AREA Azusa and Irwindale, California				Log of Boring No. PSZB-30			
BORING LOCATION: PerkinElmer				ELEVATION AND DATUM: 566.30 ft msl (NAVD 88)			
DRILLING CONTRACTOR: Layne Christenson, Co.				DATE STARTED: 3/24/05		DATE FINISHED: 3/24/05	
DRILLING METHOD: Dual Wall Air Percussion				TOTAL DEPTH (ft.): 30.5		MEASURING POINT: Ground surface	
DRILLING EQUIPMENT: Foremost Drills AP-1000				DEPTH TO WATER	FIRST NA	COMPL. NA	24 HRS. NA
SAMPLING METHOD: Cuttings from cyclone				LOGGED BY: P. Jeffers			
HAMMER WEIGHT: NA		DROP: NA		RESPONSIBLE PROFESSIONAL: G. Rees			REG. NO. 6612

DEPTH (feet)	SAMPLES			DESCRIPTION	PID READING (ppm)	REMARKS
	Sample No.	Sample	Blows/ 6 inches	NAME (USCS): color, moist, % by wt., plast. density, structure, cementation, react. w/HCl, geo. inter.		
				Surface Elevation: 566.30 ft msl (NAVD 88)		
				~4" asphalt		
1	PSZB 30-1			POORLY GRADED GRAVEL with SAND (GP): dark brown (7.5YR 4/4), moist, ~70% gravel, ~30% medium to coarse sand		Hand augered to 2.5 feet below ground surface (bgs)
2						Drilled to 30.5' bgs with 9" casing and hammer bit
3	PSZB 30-2.5					Lithology assessed from cuttings collected through the cyclone
4						
5	PSZB 30-5			~60% gravel, ~40% medium to coarse sand		
6						
7						
8	PSZB 30-7.5					
9						
10	PSZB 30-10			light brown (7.5YR 6/3), ~85% gravel, ~15% fine to coarse sand		
11						
12						
13						
14						



Log of Boring No. PSZB-30 (cont'd)

DEPTH (feet)	SAMPLES			DESCRIPTION NAME (USCS): color, moist, % by wt., plast. density, structure, cementation, react. w/HCl, geo. inter.	PID READING (ppm)	REMARKS
	Sample No.	Sample	Blows/ 6 inches			
15	PSZB 30-15			POORLY GRADED GRAVEL with SAND (GP): continued ~70% gravel, ~30% fine to medium sand		
16						
17						
18						
19						
20	PSZB 30-20			POORLY GRADED SAND with GRAVEL (SP): very pale brown (10YR 7/3), moist, ~75% fine to coarse sand, ~25% gravel		
21						
22						
23						
24				POORLY GRADED GRAVEL with SAND (GP): very pale brown (10YR 7/3), moist, ~65% gravel, ~35% fine to medium sand		
25	PSZB 30-25					
26						
27						
28						
29				POORLY GRADED SAND with GRAVEL (SP): brown (7.5YR 4/3), moist, ~70% fine to coarse sand, ~30% gravel		
30	PSZB 30-30					Boring backfilled with bentonite chips hydrated in place after each 5' lift Surface patched with asphalt
31				Bottom of boring at 30.5 ft bgs		



PROJECT: AZUSA/IRWINDALE STUDY AREA Azusa and Irwindale, California				Log of Boring No. PSZB-31			
BORING LOCATION: PerkinElmer				ELEVATION AND DATUM: 566.92 ft msl (NAVD 88)			
DRILLING CONTRACTOR: Layne Christenson, Co.				DATE STARTED: 3/25/05		DATE FINISHED: 3/25/05	
DRILLING METHOD: Dual Wall Air Percussion				TOTAL DEPTH (ft.): 30.5		MEASURING POINT: Ground surface	
DRILLING EQUIPMENT: Foremost Drills AP-1000				DEPTH TO WATER	FIRST NA	COMPL. NA	24 HRS. NA
SAMPLING METHOD: Cuttings from cyclone				LOGGED BY: P. Jeffers			
HAMMER WEIGHT: NA		DROP: NA		RESPONSIBLE PROFESSIONAL: G. Rees			REG. NO. 6612

DEPTH (feet)	SAMPLES			DESCRIPTION	PID READING (ppm)	REMARKS
	Sample No.	Sample	Blows/ 6 inches	NAME (USCS): color, moist, % by wt., plast. density, structure, cementation, react. w/HCl, geo. inter.		
				Surface Elevation: 566.92 ft msl (NAVD 88)		
				~4" asphalt		
1	PSZB 31-1			POORLY GRADED SAND with GRAVEL (SP): dark brown (7.5YR 3/2), moist, ~60% fine to medium sand, ~40% gravel		Hand augered to 2 feet below ground surface (bgs)
2						Drilled to 30.5' bgs with 9" casing and hammer bit
3	PSZB 31-2.5					Lithology assessed from cuttings collected through the cyclone
4						
5	PSZB 31-5					
6						
7						
8	PSZB 31-7.5			POORLY GRADED GRAVEL with SAND (GP): light gray (2.5Y 7/1), moist, ~75% gravel, ~25% fine to medium sand		
9						
10	PSZB 31-10					
11						
12						
13						
14						



DEPTH (feet)	SAMPLES			DESCRIPTION NAME (USCS): color, moist, % by wt., plast. density, structure, cementation, react. w/HCl, geo. inter.	PID READING (ppm)	REMARKS
	Sample No.	Sample	Blows/ 6 inches			
15	PSZB 31-15			POORLY GRADED GRAVEL with SAND (GP): continued light brown (7.5YR 6/3)		
16						
17						
18						
19				POORLY GRADED SAND with GRAVEL (SP): very pale brown (10YR 7/3), moist, ~60% fine to medium sand, ~40% gravel		
20	PSZB 31-20					
21						
22						
23						
24						
25	PSZB 31-25			brown (7.5YR 4/4), ~75% fine to medium sand, ~25% gravel		
26						
27						
28						
29				POORLY GRADED GRAVEL with SAND (GP): very pale brown (10YR 7/3), moist, ~80% gravel, ~20% fine to medium sand		
30	PSZB 31-30					Boring backfilled with bentonite chips hydrated in place after each 5' lift Surface patched with asphalt
31				Bottom of boring at 30.5 ft bgs		

RMRS



PROJECT: AZUSA/IRWINDALE STUDY AREA Azusa and Irwindale, California					Log of Boring No. PSZB-32				
BORING LOCATION: PerkinElmer					ELEVATION AND DATUM: 567.11 ft msl (NAVD 88)				
DRILLING CONTRACTOR: Layne Christenson, Co.					DATE STARTED: 3/25/05		DATE FINISHED: 3/25/05		
DRILLING METHOD: Dual Wall Air Percussion					TOTAL DEPTH (ft.): 30.5		MEASURING POINT: Ground surface		
DRILLING EQUIPMENT: Foremost Drills AP-1000					DEPTH TO WATER	FIRST NA	COMPL. NA	24 HRS. NA	
SAMPLING METHOD: Cuttings from cyclone					LOGGED BY: P. Jeffers				
HAMMER WEIGHT: NA			DROP: NA		RESPONSIBLE PROFESSIONAL: G. Rees			REG. NO. 6612	

DEPTH (feet)	SAMPLES			DESCRIPTION	PID READING (ppm)	REMARKS
	Sample No.	Sample	Blows/ 6 inches	NAME (USCS): color, moist, % by wt., plast. density, structure, cementation, react. w/HCl, geo. inter.		
				Surface Elevation: 567.11 ft msl (NAVD 88)		
				~4" asphalt		
1	PSZB 32-1			POORLY GRADED SAND with GRAVEL (SP): dark brown (7.5YR 3/2), moist, ~60% fine to medium sand, ~40% gravel		Hand augered to 3 feet below ground surface (bgs)
2						Drilled to 30.5' bgs with 9" casing and hammer bit
3	PSZB 32-2.5					Lithology assessed from cuttings collected through the cyclone
4						
5	PSZB 32-5			~75% fine to medium sand, ~25% gravel		
6						
7						
8	PSZB 32-7.5					
9				POORLY GRADED GRAVEL with SAND (GP): light gray (2.5Y 7/1), moist, ~85% gravel, ~15% fine to medium sand		
10	PSZB 32-10					
11						
12				at 12' bgs: construction debris (concrete, small metal pieces)		
13						
14						



Log of Boring No. PSZB-32 (cont'd)

DEPTH (feet)	SAMPLES			DESCRIPTION NAME (USCS): color, moist, % by wt., plast. density, structure, cementation, react. w/HCl, geo. inter.	PID READING (ppm)	REMARKS
	Sample No.	Sample	Blows/ 6 inches			
15	PSZB 32-15			POORLY GRADED GRAVEL with SAND (GP): continued		
16						
17						
18						
19				POORLY GRADED SAND with GRAVEL (SP): dark brown (7.5YR 3/2), moist, ~85% medium sand, ~15% gravel		
20	PSZB 32-20					
21						
22						
23						
24				POORLY GRADED GRAVEL with SAND (GP): very pale brown (10YR 7/3), moist, ~75% gravel, ~25% fine to medium sand		
25	PSZB 32-25					
26						
27						
28						
29						
30	PSZB 32-30			light gray (2.5Y 7/1), ~85% gravel, ~15% fine to medium sand		Boring backfilled with bentonite chips hydrated in place after each 5' lift Surface patched with asphalt
31				Bottom of boring at 30.5 ft bgs		

RMRK3



PROJECT: AZUSA/IRWINDALE STUDY AREA Azusa and Irwindale, California				Log of Boring No. PSZB-33			
BORING LOCATION: PerkinElmer				ELEVATION AND DATUM: 567.50 ft msl (NAVD 88)			
DRILLING CONTRACTOR: Layne Christenson, Co.				DATE STARTED: 3/25/05		DATE FINISHED: 3/25/05	
DRILLING METHOD: Dual Wall Air Percussion				TOTAL DEPTH (ft.): 30.5		MEASURING POINT: Ground surface	
DRILLING EQUIPMENT: Foremost Drills AP-1000				DEPTH TO WATER	FIRST NA	COMPL. NA	24 HRS. NA
SAMPLING METHOD: Cuttings from cyclone				LOGGED BY: P. Jeffers			
HAMMER WEIGHT: NA		DROP: NA		RESPONSIBLE PROFESSIONAL: G. Rees			REG. NO. 6612

DEPTH (feet)	SAMPLES			DESCRIPTION	PID READING (ppm)	REMARKS
	Sample No.	Sample	Blows/ 6 inches	NAME (USCS): color, moist, % by wt., plast. density, structure, cementation, react. w/HCl, geo. inter.		
				Surface Elevation: 567.50 ft msl (NAVD 88)		
				~4" asphalt		
1	PSZB 33-1			POORLY GRADED GRAVEL with SAND (GP): dark brown (7.5YR 3/2), moist, ~60% gravel, ~40% fine to medium sand		Hand augered to 2 feet below ground surface (bgs)
2						Drilled to 30.5' bgs with 9" casing and hammer bit
3	PSZB 33-2.5					Lithology assessed from cuttings collected through the cyclone
4						
5	PSZB 33-5			light gray (2.5Y 7/1), ~85% gravel, ~15% fine to medium sand		
6						
7						
8	PSZB 33-7.5					
9						
10	PSZB 33-10					
11						
12						
13						
14				POORLY GRADED SAND with GRAVEL (SP): see next page		



DEPTH (feet)	SAMPLES			DESCRIPTION NAME (USCS): color, moist, % by wt., plast. density, structure, cementation, react. w/HCl, geo. inter.	PID READING (ppm)	REMARKS
	Sample No.	Sample	Blows/ 6 inches			
15	PSZB 33-15			POORLY GRADED SAND with GRAVEL (SP): brown (10YR 5/3), moist, ~75% fine to medium sand, ~25% gravel		
16						
17						
18						
19						
20	PSZB 33-20			~60% fine to medium sand, ~40% gravel		
21						
22				POORLY GRADED GRAVEL with SAND (GP): very pale brown (10YR 7/3), moist, ~80% gravel, ~20% fine to medium sand		
23						
24						
25	PSZB 33-25					
26						
27						
28						
29						
30	PSZB 33-30			light gray (2.5Y 7/1), ~75% gravel, ~25% fine to medium sand		Boring backfilled with bentonite chips hydrated in place after each 5' lift Surface patched with asphalt
31				Bottom of boring at 30.5 ft bgs		

RMK3



PROJECT: AZUSA/IRWINDALE STUDY AREA Azusa and Irwindale, California					Log of Boring No. PSZB-34					
BORING LOCATION: PerkinElmer					ELEVATION AND DATUM: 567.91 ft msl (NAVD 88)					
DRILLING CONTRACTOR: Layne Christenson, Co.					DATE STARTED: 3/28/05		DATE FINISHED: 3/28/05			
DRILLING METHOD: Dual Wall Air Percussion					TOTAL DEPTH (ft.): 30.5		MEASURING POINT: Ground surface			
DRILLING EQUIPMENT: Foremost Drills AP-1000					DEPTH TO WATER		FIRST NA		COMPL. NA	
SAMPLING METHOD: Cuttings from cyclone					LOGGED BY: P. Jeffers		24 HRS. NA			
HAMMER WEIGHT: NA			DROP: NA			RESPONSIBLE PROFESSIONAL: G. Rees			REG. NO. 6612	

DEPTH (feet)	SAMPLES			DESCRIPTION	PID READING (ppm)	REMARKS
	Sample No.	Sample	Blows/ 6 inches	NAME (USCS): color, moist, % by wt., plast. density, structure, cementation, react. w/HCl, geo. inter.		
				Surface Elevation: 567.91 ft msl (NAVD 88)		
1	PSZB 34-1			~4" asphalt POORLY GRADED SAND with GRAVEL (SP): dark brown (7.5YR 3/4), moist, ~75% fine to medium sand, ~25% gravel		Hand augered to 3 feet below ground surface (bgs) Drilled to 30.5' bgs with 9" casing and hammer bit
2						
3	PSZB 34-2.5					Lithology assessed from cuttings collected through the cyclone
4						
5	PSZB 34-5			POORLY GRADED GRAVEL with SAND (GP): light gray (5YR 7/1), moist, ~60% gravel, ~40% fine to medium sand		
6						
7						
8	PSZB 34-7.5					
9						
10	PSZB 34-10			~75% gravel, ~25% fine to medium sand		
11						
12						
13						
14						



DEPTH (feet)	SAMPLES			DESCRIPTION NAME (USCS): color, moist, % by wt., plast. density, structure, cementation, react. w/HCl, geo. inter.	PID READING (ppm)	REMARKS
	Sample No.	Sample	Blows/ 6 inches			
15	PSZB 34-15			POORLY GRADED GRAVEL with SAND (GP): continued light brown (7.5YR 6/3), ~65% gravel, ~35% fine to medium sand		
16						
17						
18						
19				POORLY GRADED SAND with GRAVEL (SP): light brown (7.5YR 6/3), moist, ~70% fine to medium sand, ~30% gravel		
20	PSZB 34-20					
21						
22						
23						
24				POORLY GRADED GRAVEL with SAND (GP): light brown (7.5YR 6/3), moist, ~60% gravel, ~40% fine to medium sand		
25	PSZB 34-25					
26						
27						
28						
29				POORLY GRADED SAND with GRAVEL (SP): brown (7.5YR 5/3), moist, ~70% medium to coarse sand, ~30% gravel		
30	PSZB 34-30					Boring backfilled with bentonite chips hydrated in place after each 5' lift Surface patched with asphalt
31				Bottom of boring at 30.5 ft bgs		



PROJECT: AZUSA/IRWINDALE STUDY AREA Azusa and Irwindale, California				Log of Boring No. PSZB-35			
BORING LOCATION: PerkinElmer				ELEVATION AND DATUM: 567.34 ft msl (NAVD 88)			
DRILLING CONTRACTOR: Layne Christenson, Co.				DATE STARTED: 3/28/05		DATE FINISHED: 3/28/05	
DRILLING METHOD: Dual Wall Air Percussion				TOTAL DEPTH (ft.): 30.5		MEASURING POINT: Ground surface	
DRILLING EQUIPMENT: Foremost Drills AP-1000				DEPTH TO WATER		FIRST NA	
SAMPLING METHOD: Cuttings from cyclone				LOGGED BY: P. Jeffers		24 HRS. NA	
HAMMER WEIGHT: NA				DROP: NA		RESPONSIBLE PROFESSIONAL: G. Rees	
						REG. NO. 6612	

DEPTH (feet)	SAMPLES			Blows/ 6 inches	DESCRIPTION	PID READING (ppm)	REMARKS
	Sample No.	Sample			NAME (USCS): color, moist, % by wt., plast. density, structure, cementation, react. w/HCl, geo. inter.		
					Surface Elevation: 567.34 ft msl (NAVD 88)		
					~4" asphalt		
1	PSZB 35-1				POORLY GRADED GRAVEL with SAND (GP): dark brown (7.5YR 3/4), moist, ~60% gravel, ~40% medium to coarse sand		Hand augered to 3 feet below ground surface (bgs)
2							Drilled to 30.5' bgs with 9" casing and hammer bit
3	PSZB 35-2.5						Lithology assessed from cuttings collected through the cyclone
4							
5	PSZB 35-5				light brown (7.5YR 6/3)		
6							
7							
8	PSZB 35-7.5				POORLY GRADED SAND with GRAVEL (SP): light brown (7.5YR 6/3), moist, ~75% medium to coarse sand, ~25% gravel		
9							
10	PSZB 35-10						
11							
12							
13							
14							



Log of Boring No. PSZB-35 (cont'd)

DEPTH (feet)	SAMPLES			DESCRIPTION NAME (USCS): color, moist, % by wt., plast. density, structure, cementation, react. w/HCl, geo. inter.	PID READING (ppm)	REMARKS
	Sample No.	Sample	Blows/ 6 inches			
15	PSZB 35-15			POORLY GRADED SAND with GRAVEL (SP): continued ~70% fine to medium sand, ~30% gravel		
16						
17						
18						
19				POORLY GRADED GRAVEL with SAND (GP): light gray (5YR 7/1), moist, ~85% gravel, ~15% fine to coarse sand		
20	PSZB 35-20					
21						
22						
23				POORLY GRADED SAND with GRAVEL (SP): light gray (5YR 7/1), moist, ~60% fine to medium sand, ~40% gravel		
24						
25	PSZB 35-25					
26						
27						
28						
29						
30	PSZB 35-30			brown (7.5YR 5/3), ~75% medium to coarse sand, ~25% gravel		Boring backfilled with bentonite chips hydrated in place after each 5' lift Surface patched with asphalt
31				Bottom of boring at 30.5 ft bgs		

RMRK



PROJECT: AZUSA/IRWINDALE STUDY AREA Azusa and Irwindale, California						Log of Boring No. PSZB-36			
BORING LOCATION: PerkinElmer						ELEVATION AND DATUM: 569.80 ft msl (NAVD 88)			
DRILLING CONTRACTOR: Layne Christenson, Co.						DATE STARTED: 3/29/05		DATE FINISHED: 3/29/05	
DRILLING METHOD: Dual Wall Air Percussion						TOTAL DEPTH (ft.): 30.5		MEASURING POINT: Ground surface	
DRILLING EQUIPMENT: Foremost Drills AP-1000						DEPTH TO WATER	FIRST NA	COMPL. NA	24 HRS. NA
SAMPLING METHOD: Cuttings from cyclone						LOGGED BY: P. Jeffers			
HAMMER WEIGHT: NA			DROP: NA			RESPONSIBLE PROFESSIONAL: G. Rees			REG. NO. 6612

DEPTH (feet)	SAMPLES			DESCRIPTION	PID READING (ppm)	REMARKS
	Sample No.	Sample	Blows/ 6 inches	NAME (USCS): color, moist, % by wt., plast. density, structure, cementation, react. w/HCl, geo. inter.		
				Surface Elevation: 569.80 ft msl (NAVD 88)		
1	PSZB 36-1			~4" asphalt POORLY GRADED SAND with GRAVEL (SP): dark brown (7.5YR 3/4), moist, ~70% medium sand, ~30% gravel		Hand augered to 2 feet below ground surface (bgs) Drilled to 30.5' bgs with 9" casing and hammer bit Lithology assessed from cuttings collected through the cyclone
2						
3	PSZB 36-2.5					
4						
5	PSZB 36-5			SILTY GRAVEL with SAND (GM): light brown (7.5YR 6/3), moist, ~70% gravel, ~15% fine to medium sand ~15% nonplastic fines		
6						
7						
8	PSZB 36-7.5					
9						
10	PSZB 36-10			POORLY GRADED GRAVEL with SAND (GP): light gray (10YR 7/1), moist, ~85% gravel, ~15% fine to medium sand		
11						
12						
13						
14						



DEPTH (feet)	SAMPLES			DESCRIPTION NAME (USCS): color, moist, % by wt., plast. density, structure, cementation, react. w/HCl, geo. inter.	PID READING (ppm)	REMARKS
	Sample No.	Sample	Blows/ 6 inches			
15	PSZB 36-15			POORLY GRADED GRAVEL with SAND (GP): continued		
16						
17						
18						
19				POORLY GRADED SAND with GRAVEL (SP): brown (7.5YR 5/3), moist, ~60% fine to medium sand, ~40% gravel		
20	PSZB 36-20					
21						
22						
23						
24						
25	PSZB 36-25			dark brown (7.5YR 3/4), ~75% medium to coarse sand, ~25% gravel		
26						
27						
28						
29						
30	PSZB 36-30			POORLY GRADED GRAVEL with SAND (GP): light brown (7.5YR 6/3), moist, ~60% gravel, ~40% fine to medium sand		Boring backfilled with bentonite chips hydrated in place after each 5' lift Surface patched with asphalt
31				Bottom of boring at 30.5 ft bgs		



PROJECT: AZUSA/IRWINDALE STUDY AREA Azusa and Irwindale, California					Log of Boring No. PSZB-37					
BORING LOCATION: PerkinElmer					ELEVATION AND DATUM: 567.98 ft msl (NAVD 88)					
DRILLING CONTRACTOR: Layne Christenson, Co.					DATE STARTED: 3/29/05		DATE FINISHED: 3/29/05			
DRILLING METHOD: Dual Wall Air Percussion					TOTAL DEPTH (ft.): 30.5		MEASURING POINT: Ground surface			
DRILLING EQUIPMENT: Foremost Drills AP-1000					DEPTH TO WATER		FIRST NA		COMPL. NA	
SAMPLING METHOD: Cuttings from cyclone					LOGGED BY: P. Jeffers		24 HRS. NA			
HAMMER WEIGHT: NA			DROP: NA			RESPONSIBLE PROFESSIONAL: G. Rees			REG. NO. 6612	

DEPTH (feet)	SAMPLES			DESCRIPTION	PID READING (ppm)	REMARKS
	Sample No.	Sample	Blows/ 6 inches	NAME (USCS): color, moist, % by wt., plast. density, structure, cementation, react. w/HCl, geo. inter.		
				Surface Elevation: 567.98 ft msl (NAVD 88)		
				~4" asphalt		
1	PSZB 37-1			POORLY GRADED GRAVEL with SAND (GP): dark brown (7.5YR 3/4), moist, ~60% gravel, ~40% medium to coarse sand		Hand augered to 3 feet below ground surface (bgs)
2						Drilled to 30.5' bgs with 9" casing and hammer bit
3	PSZB 37-2.5					Lithology assessed from cuttings collected through the cyclone
4						
5	PSZB 37-5			light brown (7.5YR 6/3), ~75% gravel, ~25% fine to medium sand		
6						
7						
8	PSZB 37-7.5					
9						
10	PSZB 37-10			light gray (10YR 7/1), ~85% gravel, ~15% fine to medium sand		
11						
12						
13						
14						



Log of Boring No. PSZB-37 (cont'd)

DEPTH (feet)	SAMPLES			DESCRIPTION NAME (USCS): color, moist, % by wt., plast. density, structure, cementation, react. w/HCl, geo. inter.	PID READING (ppm)	REMARKS
	Sample No.	Sample	Blows/ 6 inches			
15	PSZB 37-15			POORLY GRADED GRAVEL with SAND (GP): continued light brown (7.5YR 6/3), ~70% gravel, ~30% fine to medium sand		
16						
17						
18						
19				POORLY GRADED SAND with GRAVEL (SP): brown (7.5YR 5/3), moist, ~85% medium to coarse sand, ~15% gravel		
20	PSZB 37-20					
21						
22						
23				POORLY GRADED GRAVEL with SAND (GP): light gray (10YR 7/1), moist, ~70% gravel, ~30% fine to medium sand		
24						
25	PSZB 37-25					
26						
27						
28				POORLY GRADED SAND with GRAVEL (SP): light brown (7.5YR 6/3), moist, ~80% fine to medium sand, ~20% gravel		
29						
30	PSZB 37-30					Boring backfilled with bentonite chips hydrated in place after each 5' lift Surface patched with asphalt
31				Bottom of boring at 30.5 ft bgs		



PROJECT: AZUSA/IRWINDALE STUDY AREA Azusa and Irwindale, California					Log of Boring No. PSZB-38			
BORING LOCATION: PerkinElmer					ELEVATION AND DATUM: 565.86 ft msl (NAVD 88)			
DRILLING CONTRACTOR: Layne Christenson, Co.					DATE STARTED: 3/29/05		DATE FINISHED: 3/29/05	
DRILLING METHOD: Dual Wall Air Percussion					TOTAL DEPTH (ft.): 30.5		MEASURING POINT: Ground surface	
DRILLING EQUIPMENT: Foremost Drills AP-1000					DEPTH TO WATER	FIRST NA	COMPL. NA	24 HRS. NA
SAMPLING METHOD: Cuttings from cyclone					LOGGED BY: P. Jeffers			
HAMMER WEIGHT: NA			DROP: NA		RESPONSIBLE PROFESSIONAL: G. Rees			REG. NO. 6612

DEPTH (feet)	SAMPLES			DESCRIPTION NAME (USCS): color, moist, % by wt., plast. density, structure, cementation, react. w/HCl, geo. inter.	PID READING (ppm)	REMARKS
	Sample No.	Sample	Blows/ 6 inches			
				Surface Elevation: 565.86 ft msl (NAVD 88)		
				~4" asphalt		
1	PSZB 38-1			POORLY GRADED GRAVEL with SAND (GP): dark brown (7.5YR 3/4), moist, ~60% gravel, ~40% medium to coarse sand		Hand augered to 2 feet below ground surface (bgs)
2						Drilled to 30.5' bgs with 9" casing and hammer bit
3	PSZB 38-2.5					Lithology assessed from cuttings collected through the cyclone
4						
5	PSZB 38-5			light gray (10YR 7/1), ~85% gravel, ~15% medium to coarse sand		
6						
7						
8	PSZB 38-7.5					
9						
10	PSZB 38-10			~80% gravel, ~20% fine to medium sand		
11						
12						
13						
14						



DEPTH (feet)	SAMPLES			DESCRIPTION NAME (USCS): color, moist, % by wt., plast. density, structure, cementation, react. w/HCl, geo. inter.	PID READING (ppm)	REMARKS
	Sample No.	Sample	Blows/ 6 inches			
15	PSZB 38-15			POORLY GRADED GRAVEL with SAND (GP): continued light brown (7.5YR 6/3), ~85% gravel, ~15% fine to medium sand		
16						
17						
18						
19						
20	PSZB 38-20			POORLY GRADED SAND with GRAVEL (SP): brown (7.5YR 5/3), moist, ~75% fine to medium sand, ~25% gravel		
21						
22						
23						
24						
25	PSZB 38-25			light gray (10YR 7/1),		
26						
27						
28						
29						
30	PSZB 38-30			POORLY GRADED GRAVEL with SAND (GP): light gray (10YR 7/1), moist, ~65% gravel, ~35% fine to medium sand		Boring backfilled with bentonite chips hydrated in place after each 5' lift Surface patched with asphalt
31				Bottom of boring at 30.5 ft bgs		

RMRK3



PROJECT: AZUSA/IRWINDALE STUDY AREA Azusa and Irwindale, California					Log of Boring No. PSZB-39				
BORING LOCATION: PerkinElmer					ELEVATION AND DATUM: 564.60 ft msl (NAVD 88)				
DRILLING CONTRACTOR: Layne Christenson, Co.					DATE STARTED: 3/22/05		DATE FINISHED: 3/22/05		
DRILLING METHOD: Dual Wall Air Percussion					TOTAL DEPTH (ft.): 30.5		MEASURING POINT: Ground surface		
DRILLING EQUIPMENT: Foremost Drills AP-1000					DEPTH TO WATER	FIRST NA	COMPL. NA	24 HRS. NA	
SAMPLING METHOD: Cuttings from cyclone					LOGGED BY: L. Budny				
HAMMER WEIGHT: NA			DROP: NA		RESPONSIBLE PROFESSIONAL: G. Rees			REG. NO. 6612	

DEPTH (feet)	SAMPLES			Blows/ 6 inches	DESCRIPTION	PID READING (ppm)	REMARKS
	Sample No.	Sample	Blows/ 6 inches	NAME (USCS): color, moist, % by wt., plast. density, structure, cementation, react. w/HCl, geo. inter.			
					Surface Elevation: 564.60 ft msl (NAVD 88)		
					~4" asphalt		
1	PSZB 39-1				POORLY GRADED SAND (SP): yellowish brown (10YR 5/4), moist, 100% medium to coarse sand		Hand augered to 2.5 feet below ground surface (bgs)
2							Drilled to 30.5' bgs with 9" casing and hammer bit
3	PSZB 39-2.5				trace gravel ↓		Lithology assessed from cuttings collected through the cyclone
4							
5	PSZB 39-5				POORLY GRADED SAND with GRAVEL (SP): yellowish brown (10YR 5/4), moist, ~85% medium to coarse sand, ~15% gravel		
6							
7							
8	PSZB 39-7.5						
9							
10	PSZB 39-10						
11							
12							
13							
14							

Geomatrix Consultants

Project No. 7190.004.0

Page 1 of 2

RMRK3

DEPTH (feet)	SAMPLES			DESCRIPTION NAME (USCS): color, moist, % by wt., plast. density, structure, cementation, react. w/HCl, geo. inter.	PID READING (ppm)	REMARKS
	Sample No.	Sample	Blows/ 6 inches			
15	PSZB 39-15			POORLY GRADED SAND with GRAVEL (SP): continued		
16						
17						
18						
19						
20	PSZB 39-20			SILTY SAND with GRAVEL (SM): light brownish gray (10YR 6/2), moist, ~65% fine to coarse sand, ~20% gravel, ~15% nonplastic fines		
21						
22						
23						
24						
25	PSZB 39-25					
26						
27						
28						
29						
30	PSZB 39-30					Boring backfilled with bentonite chips hydrated in place after each 5' lift Surface patched with asphalt
31				Bottom of boring at 30.5 ft bgs		

RMRK3



PROJECT: AZUSA/IRWINDALE STUDY AREA Azusa and Irwindale, California				Log of Boring No. PSZB-40			
BORING LOCATION: PerkinElmer				ELEVATION AND DATUM: 564.24 ft msl (NAVD 88)			
DRILLING CONTRACTOR: Layne Christenson, Co.				DATE STARTED: 3/22/05		DATE FINISHED: 3/22/05	
DRILLING METHOD: Dual Wall Air Percussion				TOTAL DEPTH (ft.): 30.5		MEASURING POINT: Ground surface	
DRILLING EQUIPMENT: Foremost Drills AP-1000				DEPTH TO WATER	FIRST NA	COMPL. NA	24 HRS. NA
SAMPLING METHOD: Cuttings from cyclone				LOGGED BY: L. Budny			
HAMMER WEIGHT: NA		DROP: NA		RESPONSIBLE PROFESSIONAL: G. Rees			REG. NO. 6612

DEPTH (feet)	SAMPLES		Blows/ 6 inches	DESCRIPTION	PID READING (ppm)	REMARKS
	Sample No.	Sample		NAME (USCS): color, moist, % by wt., plast. density, structure, cementation, react. w/HCl, geo. inter.		
				Surface Elevation: 564.24 ft msl (NAVD 88)		
				~4" asphalt		
1	PSZB 40-1			POORLY GRADED SAND (SP): yellowish brown (10YR 5/4), moist, 100% medium to coarse sand		Hand augered to 1.5 feet below ground surface (bgs)
2						Drilled to 30.5' bgs with 9" casing and hammer bit
3	PSZB 40-2.5					Lithology assessed from cuttings collected through the cyclone
4						
5	PSZB 40-5			POORLY GRADED GRAVEL with SAND (GP): dark brown (10YR 3/3), moist, ~85% gravel, ~15% coarse sand		
6						
7						
8	PSZB 40-7.5			POORLY GRADED SAND with GRAVEL (SP): yellowish brown (10YR 5/4), moist, ~85% medium to coarse sand, ~15% gravel		
9						
10	PSZB 40-10					
11						
12						
13						
14						

Geomatrix Consultants

Project No. 7190.004.0
Page 1 of 2

RMRK3

DEPTH (feet)	SAMPLES			DESCRIPTION NAME (USCS): color, moist, % by wt., plast. density, structure, cementation, react. w/HCl, geo. inter.	PID READING (ppm)	REMARKS
	Sample No.	Sample Blows/ 6 inches				
15	PSZB 40-15			POORLY GRADED SAND with GRAVEL (SP): continued		
16						
17						
18						
19						
20	PSZB 40-20			SILTY SAND with GRAVEL (SM): light brownish gray (10YR 6/2), moist, ~65% fine to coarse sand, ~20% gravel, ~15% nonplastic fines		
21						
22						
23						
24						
25						No recovery at 25' bgs
26						
27						
28						
29						
30	PSZB 40-30					Boring backfilled with bentonite chips hydrated in place after each 5' lift Surface patched with asphalt
31				Bottom of boring at 30.5 ft bgs		

RMRKJ



PROJECT: AZUSA/IRWINDALE STUDY AREA Azusa and Irwindale, California					Log of Boring No. PSZB-41				
BORING LOCATION: PerkinElmer					ELEVATION AND DATUM: 562.31 ft msl (NAVD 88)				
DRILLING CONTRACTOR: Layne Christenson, Co.					DATE STARTED: 4/1/05		DATE FINISHED: 4/1/05		
DRILLING METHOD: Dual Wall Air Percussion					TOTAL DEPTH (ft.): 30.5		MEASURING POINT: Ground surface		
DRILLING EQUIPMENT: Foremost Drills AP-1000					DEPTH TO WATER	FIRST NA	COMPL. NA	24 HRS. NA	
SAMPLING METHOD: Cuttings from cyclone					LOGGED BY: P. Jeffers				
HAMMER WEIGHT: NA			DROP: NA		RESPONSIBLE PROFESSIONAL: G. Rees			REG. NO. 6612	

DEPTH (feet)	SAMPLES			Blows/ 6 inches	DESCRIPTION	PID READING (ppm)	REMARKS
	Sample No.	Sample	Blows/ 6 inches		NAME (USCS): color, moist, % by wt., plast. density, structure, cementation, react. w/HCl, geo. inter.		
					Surface Elevation: 562.31 ft msl (NAVD 88)		
					~4" asphalt		
1	PSZB 41-1				POORLY GRADED GRAVEL with SAND (GP): dark brown (7.5YR 3/4), moist, ~70% gravel, ~30% medium to coarse sand		Hand augered to 3 feet below ground surface (bgs)
2							Drilled to 30.5' bgs with 9" casing and hammer bit
3	PSZB 41-2.5						Lithology assessed from cuttings collected through the cyclone
4							
5	PSZB 41-5				light gray (5Y 7/1), ~85% gravel, ~15% fine to medium sand		
6							
7							
8							
9							
10	PSZB 41-10				~70% gravel, ~30% fine to medium sand		
11							
12							
13							
14							

Geomatrix Consultants

Project No. 7190.004.0

Page 1 of 2

RMRK3

PROJECT: AZUSA/IRWINDALE STUDY AREA
Azusa and Irwindale, California

Log of Boring No. PSZB-41 (cont'd)

DEPTH (feet)	SAMPLES			DESCRIPTION NAME (USCS): color, moist, % by wt., plast. density, structure, cementation, react. w/HCl, geo. inter.	PID READING (ppm)	REMARKS
	Sample No.	Sample	Blows/ 6 inches			
15	PSZB 41-15			POORLY GRADED GRAVEL with SAND (GP): continued ~85% gravel, ~15% fine to medium sand		
16						
17						
18						
19						
20	PSZB 41-20			POORLY GRADED SAND with GRAVEL (SP): light brown (7.5YR 6/3), moist, ~70% fine to medium sand, ~30% gravel		
21						
22						
23						
24						
25	PSZB 41-25			~80% fine to medium sand, ~20% gravel		
26						
27				POORLY GRADED GRAVEL with SAND (GP): light brown (7.5YR 6/4), moist, ~70% gravel, ~30% fine to medium sand		
28						
29						
30	PSZB 41-30					Boring backfilled with bentonite chips hydrated in place after each 5' lift Surface patched with asphalt
31				Bottom of boring at 30.5 ft bgs		

RMRK3



Geomatrix Consultants

Project No. 7190.004.0

Page 2 of 2

PROJECT: AZUSA/IRWINDALE STUDY AREA Azusa and Irwindale, California				Log of Boring No. PSZB-42			
BORING LOCATION: PerkinElmer				ELEVATION AND DATUM: 563.48 ft msl (NAVD 88)			
DRILLING CONTRACTOR: Layne Christenson, Co.				DATE STARTED: 3/31/05		DATE FINISHED: 3/31/05	
DRILLING METHOD: Dual Wall Air Percussion				TOTAL DEPTH (ft.): 30.5		MEASURING POINT: Ground surface	
DRILLING EQUIPMENT: Foremost Drills AP-1000				DEPTH TO WATER	FIRST NA	COMPL. NA	24 HRS. NA
SAMPLING METHOD: Cuttings from cyclone				LOGGED BY: P. Jeffers			
HAMMER WEIGHT: NA		DROP: NA		RESPONSIBLE PROFESSIONAL: G. Rees			REG. NO. 6612

DEPTH (feet)	SAMPLES			DESCRIPTION	PID READING (ppm)	REMARKS
	Sample No.	Sample	Blows/ 6 inches	NAME (USCS): color, moist, % by wt., plast. density, structure, cementation, react. w/HCl, geo. inter.		
				Surface Elevation: 563.48 ft msl (NAVD 88)		
				~4" asphalt		
1	PSZB 42-1			POORLY GRADED GRAVEL with SAND (GP): dark brown (7.5YR 3/4), moist, ~65% gravel, ~35% medium to coarse sand		Hand augered to 2 feet below ground surface (bgs)
2						Drilled to 30.5' bgs with 9" casing and hammer bit
3	PSZB 42-2.5					Lithology assessed from cuttings collected through the cyclone
4						
5	PSZB 42-5			light gray (5Y 7/1), ~85% gravel, ~15% fine to medium sand		
6						
7						
8	PSZB 42-7.5					
9						
10	PSZB 42-10			~70% gravel, ~30% fine to medium sand		
11						
12						
13						
14						

Geomatrix Consultants

Project No. 7190.004.0

Page 1 of 2

RMRK3

PROJECT: AZUSA/IRWINDALE STUDY AREA
Azusa and Irwindale, California

Log of Boring No. PSZB-42 (cont'd)

DEPTH (feet)	SAMPLES			DESCRIPTION NAME (USCS): color, moist, % by wt., plast. density, structure, cementation, react. w/HCl, geo. inter.	PID READING (ppm)	REMARKS
	Sample No.	Sample	Blows/ 6 inches			
15	PSZB 42-15			POORLY GRADED GRAVEL with SAND (GP): continued ~80% gravel, ~20% fine to medium sand		
16						
17						
18						
19				POORLY GRADED SAND with GRAVEL (SP): light brown (7.5YR 6/3), moist, ~70% fine to medium sand, ~30% gravel		
20	PSZB 42-20					
21						
22						
23						
24						
25	PSZB 42-25			~80% fine to medium sand, ~20% gravel		
26						
27						
28						
29						
30	PSZB 42-30					Boring backfilled with bentonite chips hydrated in place after each 5' lift Surface patched with asphalt
31				Bottom of boring at 30.5 ft bgs		

RMRK3



Geomatrix Consultants

Project No. 7190.004.0

Page 2 of 2

PROJECT: AZUSA/IRWINDALE STUDY AREA Azusa and Irwindale, California					Log of Boring No. PSZB-43				
BORING LOCATION: PerkinElmer					ELEVATION AND DATUM: 565.22 ft msl (NAVD 88)				
DRILLING CONTRACTOR: Layne Christenson, Co.					DATE STARTED: 3/30/05		DATE FINISHED: 3/30/05		
DRILLING METHOD: Dual Wall Air Percussion					TOTAL DEPTH (ft.): 30.5		MEASURING POINT: Ground surface		
DRILLING EQUIPMENT: Foremost Drills AP-1000					DEPTH TO WATER	FIRST NA	COMPL. NA	24 HRS. NA	
SAMPLING METHOD: Cuttings from cyclone					LOGGED BY: P. Jeffers				
HAMMER WEIGHT: NA			DROP: NA		RESPONSIBLE PROFESSIONAL: G. Rees			REG. NO. 6612	

DEPTH (feet)	SAMPLES		Blows/ 6 inches	DESCRIPTION	PID READING (ppm)	REMARKS
	Sample No.	Sample		NAME (USCS): color, moist, % by wt., plast. density, structure, cementation, react. w/HCl, geo. inter.		
				Surface Elevation: 565.22 ft msl (NAVD 88)		
				~4" asphalt		
1	PSZB 43-1			POORLY GRADED GRAVEL with SAND (GP): dark brown (7.5YR 3/4), moist, ~60% gravel, ~40% medium to coarse sand		Hand augered to 2 feet below ground surface (bgs)
2						Drilled to 30.5' bgs with 9" casing and hammer bit
3	PSZB 43-2.5					Lithology assessed from cuttings collected through the cyclone
4						
5	PSZB 43-5			light gray (5Y 7/1), ~70% gravel, ~30% fine to medium sand		
6						
7						
8	PSZB 43-7.5					
9						
10	PSZB 43-10					
11						
12						
13						
14						



Log of Boring No. PSZB-43 (cont'd)

DEPTH (feet)	SAMPLES			DESCRIPTION NAME (USCS): color, moist, % by wt., plast. density, structure, cementation, react. w/HCl, geo. inter.	PID READING (ppm)	REMARKS
	Sample No.	Sample	Blows/ 6 inches			
15	PSZB 43-15			~85% gravel, ~15% fine to medium sand		
16						
17						
18						
19						
20	PSZB 43-20			~70% gravel, ~30% fine to medium sand		
21						
22						
23						
24				POORLY GRADED SAND with GRAVEL (SP): light brown (7.5YR 6/4), moist, ~70% fine to medium sand, ~30% gravel		
25	PSZB 43-25					
26						
27						
28						
29						
30	PSZB 43-30			POORLY GRADED GRAVEL with SAND (GP): light brown (7.5YR 6/4), moist, ~60% gravel, ~40% fine to medium sand		Boring backfilled with bentonite chips hydrated in place after each 5' lift Surface patched with asphalt
31				Bottom of boring at 30.5 ft bgs		

RMRK3



PROJECT: AZUSA/IRWINDALE STUDY AREA Azusa and Irwindale, California					Log of Boring No. PSZB-44				
BORING LOCATION: PerkinElmer					ELEVATION AND DATUM: 565.93 ft msl (NAVD 88)				
DRILLING CONTRACTOR: Layne Christenson, Co.					DATE STARTED: 3/30/05		DATE FINISHED: 3/30/05		
DRILLING METHOD: Dual Wall Air Percussion					TOTAL DEPTH (ft.): 30.5		MEASURING POINT: Ground surface		
DRILLING EQUIPMENT: Foremost Drills AP-1000					DEPTH TO WATER	FIRST NA	COMPL. NA	24 HRS. NA	
SAMPLING METHOD: Cuttings from cyclone					LOGGED BY: P. Jeffers				
HAMMER WEIGHT: NA			DROP: NA		RESPONSIBLE PROFESSIONAL: G. Rees			REG. NO. 6612	

DEPTH (feet)	SAMPLES			DESCRIPTION	PID READING (ppm)	REMARKS
	Sample No.	Sample	Blows/ 6 inches	NAME (USCS): color, moist, % by wt., plast. density, structure, cementation, react. w/HCl, geo. inter.		
				Surface Elevation: 565.93 ft msl (NAVD 88)		
1	PSZB 44-1			~4" asphalt POORLY GRADED GRAVEL with SAND (GP): dark brown (7.5YR 3/4), moist, ~70% gravel, ~30% medium to coarse sand		Hand augered to 3 feet below ground surface (bgs)
2						Drilled to 30.5' bgs with 9" casing and hammer bit
3	PSZB 44-2.5					Lithology assessed from cuttings collected through the cyclone
4				POORLY GRADED SAND with GRAVEL (SP): dark brown (7.5YR 3/4), moist, ~85% fine to medium sand, ~15% gravel		
5	PSZB 44-5					
6						
7						
8	PSZB 44-7.5					
9						
10	PSZB 44-10			POORLY GRADED GRAVEL with SAND (GP): light brown (7.5YR 6/4), moist, ~70% gravel, ~30% fine to medium sand		
11						
12						
13						
14						



PROJECT: AZUSA/IRWINDALE STUDY AREA
Azusa and Irwindale, California

Log of Boring No. PSZB-44 (cont'd)

DEPTH (feet)	SAMPLES			DESCRIPTION NAME (USCS): color, moist, % by wt., plast. density, structure, cementation, react. w/HCl, geo. inter.	PID READING (ppm)	REMARKS
	Sample No.	Sample	Blows/ 6 inches			
15	PSZB 44-15			POORLY GRADED GRAVEL with SAND (GP): continued light gray (5Y 7/1), ~80% gravel, ~20% fine to medium sand		
16						
17						
18						
19						
20	PSZB 44-20			light brown (7.5YR 6/4), ~60% gravel, ~40% fine to medium sand		Very difficult drilling from 20'-30' bgs
21						
22						
23						
24						
25	PSZB 44-25			light gray (5Y 7/1),		
26						
27						
28						
29						
30	PSZB 44-30			~85% gravel, ~15% fine to medium sand		Boring backfilled with bentonite chips hydrated in place after each 5' lift Surface patched with asphalt
31				Bottom of boring at 30.5 ft bgs		

RMRK3



Geomatrix Consultants

Project No. 7190.004.0

Page 2 of 2

PROJECT: AZUSA/IRWINDALE STUDY AREA Azusa and Irwindale, California				Log of Boring No. PSZB-45			
BORING LOCATION: PerkinElmer.				ELEVATION AND DATUM: 566.11 ft msl (NAVD 88)			
DRILLING CONTRACTOR: Layne Christenson, Co.				DATE STARTED: 2/8/06		DATE FINISHED: 2/8/06	
DRILLING METHOD: Dual Wall Air Percussion				TOTAL DEPTH (ft.): 40.5		MEASURING POINT: Ground surface	
DRILLING EQUIPMENT: Foremost Drills AP-1000				DEPTH TO WATER	FIRST NA	COMPL. NA	24 HRS. NA
SAMPLING METHOD: Cuttings from cyclone				LOGGED BY: K. Zeiler			
HAMMER WEIGHT: NA		DROP: NA		RESPONSIBLE PROFESSIONAL: G. Rees			REG. NO. 6612

DEPTH (feet)	SAMPLES			DESCRIPTION	PID READING (ppm)	REMARKS
	Sample No.	Sample	Blows/ 6 inches	NAME (USCS): color, moist, % by wt., plast. density, structure, cementation, react. w/HCl, geo. inter.		
				Surface Elevation: 566.11 ft msl (NAVD 88)		
				-3" asphalt		
1	PSZB-45-1					Air knifed to 5' 3" below ground surface (bgs) by BC² Environmental
2						3"-4" cobbles in air knife cuttings
3	PSZB-45-2.5					1' and 2.5' samples collected from sidewalls of boring
4						Drilled to 40.5' bgs with 9" casing and hammer bit
5				POORLY GRADED SAND with GRAVEL (SP): grayish brown (2.5Y 5/2), moist, ~75% fine to coarse sand, ~25% gravel, trace fines		Lithology assessed from cuttings collected through the cyclone
6	PSZB-45-6					
7						
8	PSZB-45-7.5					
9						
10	PSZB-45-10					
11						
12						
13				POORLY GRADED GRAVEL with SAND (GP): dark grayish brown (2.5Y 4/2), moist, ~85% gravel, ~15% fine to coarse sand, trace fines		
14						



DEPTH (feet)	SAMPLES			DESCRIPTION NAME (USCS): color, moist, % by wt., plast density, structure, cementation, react. w/HCl, geo. inter.	P/D READING (ppm)	REMARKS
	Sample No.	Sample	Blows/ 6 inches			
15	PSZB-45-15			POORLY GRADED GRAVEL with SAND (GP): continued		
16						
17						
18				~65% gravel, ~35% fine to coarse sand, trace fines		
19						
20	PSZB-45-20					
21						
22						
23				~75% gravel, ~25% fine to coarse sand, trace fines		
24						
25	PSZB-45-25					
26						
27						
28				POORLY GRADED SAND with GRAVEL (SP): grayish brown (2.5Y 5/2), moist, ~70% fine to medium sand, ~30% gravel, trace fines		
29						
30	PSZB-45-30					
31						

RMRK3



DEPTH (feet)	SAMPLES			DESCRIPTION NAME (USCS): color, moist, % by wt., plast. density, structure, cementation, react. w/HCl, geo. inter.	PID READING (ppm)	REMARKS
	Sample No.	Sample	Blows/ 6 inches			
32				POORLY GRADED SAND with GRAVEL (SP): continued ~80% fine to coarse sand, ~20% gravel, trace fines ↓		
33						
34						
35	PSZB-45-35					
36						
37						
38						
39						
40	PSZB-45-40					
41						Boring backfilled with bentonite chips and continuously hydrated Surface patched with asphalt
42				Bottom of boring at 40.5 ft bgs		
43						
44						
45						
46						
47						
48						

PROJECT: AZUSA/IRWINDALE STUDY AREA Azusa and Irwindale, California				Log of Boring No. PSZB-46			
BORING LOCATION: PerkinElmer				ELEVATION AND DATUM: 567.08 ft msl (NAVD 88)			
DRILLING CONTRACTOR: Layne Christenson, Co.				DATE STARTED: 3/31/05		DATE FINISHED: 3/31/05	
DRILLING METHOD: Dual Wall Air Percussion				TOTAL DEPTH (ft.): 30.5		MEASURING POINT: Ground surface	
DRILLING EQUIPMENT: Foremost Drills AP-1000				DEPTH TO WATER	FIRST NA	COMPL. NA	24 HRS. NA
SAMPLING METHOD: Cuttings from cyclone				LOGGED BY: P. Jeffers			
HAMMER WEIGHT: NA		DROP: NA		RESPONSIBLE PROFESSIONAL: G. Rees			REG. NO. 6612

DEPTH (feet)	SAMPLES			DESCRIPTION	PID READING (ppm)	REMARKS
	Sample No.	Sample	Blows/ 6 inches	NAME (USCS): color, moist, % by wt., plast. density, structure, cementation, react. w/HCl, geo. inter.		
				Surface Elevation: 567.08 ft msl (NAVD 88)		
				~4" asphalt		
1	PSZB 46-1			POORLY GRADED GRAVEL with SAND (GP): dark brown (7.5YR 3/4), moist, ~75% gravel, ~25% medium to coarse sand		Hand augered to 2 feet below ground surface (bgs)
2						
3	PSZB 46-2.5					Drilled to 30.5' bgs with 9" casing and hammer bit
4						
5	PSZB 46-5			~60% gravel, ~40% fine to medium sand		Lithology assessed from cuttings collected through the cyclone
6						
7						
8	PSZB 46-7.5					
9						
10	PSZB 46-10			POORLY GRADED GRAVEL (GP): light gray (5Y 7/1), moist, ~95% gravel, ~5% medium to coarse sand		
11						
12						
13						
14				POORLY GRADED GRAVEL with SAND (GP): light brown (7.5YR 6/3), moist, ~60% gravel, ~40% fine to medium sand		



PROJECT: AZUSA/IRWINDALE STUDY AREA
Azusa and Irwindale, California

Log of Boring No. PSZB-46 (cont'd)

DEPTH (feet)	SAMPLES			DESCRIPTION NAME (USCS): color, moist, % by wt., plast. density, structure, cementation, react. w/HCl, geo. inter.	PID READING (ppm)	REMARKS
	Sample No.	Sample	Blows/ 6 inches			
15	PSZB 46-15			POORLY GRADED GRAVEL with SAND (GP): continued		
16						
17						
18						
19						
20	PSZB 46-20			POORLY GRADED SAND with GRAVEL (SP): light brown (7.5YR 6/3), moist, ~70% fine to medium sand, ~30% gravel		
21						
22						
23						
24						
25	PSZB 46-25			POORLY GRADED GRAVEL with SAND (GP): light gray (5Y 7/1), moist, ~85% gravel, ~15% fine to medium sand		
26						
27						
28						
29						
30	PSZB 46-30					Boring backfilled with bentonite chips hydrated in place after each 5' lift Surface patched with asphalt
31				Bottom of boring at 30.5 ft bgs		

RMRK3



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Project No. 7190.004.0

Page 2 of 2

PROJECT: AZUSA/IRWINDALE STUDY AREA Azusa and Irwindale, California				Log of Boring No. PSZB-47			
BORING LOCATION: PerkinElmer				ELEVATION AND DATUM: 566.50 ft msl (NAVD 88)			
DRILLING CONTRACTOR: Layne Christenson, Co.				DATE STARTED: 4/1/05		DATE FINISHED: 4/1/05	
DRILLING METHOD: Dual Wall Air Percussion				TOTAL DEPTH (ft.): 30.5		MEASURING POINT: Ground surface	
DRILLING EQUIPMENT: Foremost Drills AP-1000				DEPTH TO WATER		FIRST NA	
SAMPLING METHOD: Cuttings from cyclone				LOGGED BY: P. Jeffers		24 HRS. NA	
HAMMER WEIGHT: NA				DROP: NA		RESPONSIBLE PROFESSIONAL: G. Rees	
						REG. NO. 6612	

DEPTH (feet)	SAMPLES			DESCRIPTION	PID READING (ppm)	REMARKS
	Sample No.	Sample	Blows/ 6 inches	NAME (USCS): color, moist, % by wt., plast. density, structure, cementation, react. w/HCl, geo. inter.		
				Surface Elevation: 566.50 ft msl (NAVD 88)		
				~4" asphalt		
1	PSZB 47-1			POORLY GRADED GRAVEL with SAND (GP): dark brown (7.5YR 3/4), moist, ~60% gravel, ~40% medium to coarse sand		Hand augered to 2 feet below ground surface (bgs)
2						Drilled to 30.5' bgs with 9" casing and hammer bit
3	PSZB 47-2.5					Lithology assessed from cuttings collected through the cyclone
4						
5	PSZB 47-5			light brown (7.5YR 6/3), ~70% gravel, ~30% fine to coarse sand		
6						
7						
8	PSZB 47-7.5			POORLY GRADED SAND with GRAVEL (SP): light brown (7.5YR 6/3), moist, ~85% fine to medium sand, ~15% gravel		
9						
10	PSZB 47-10					
11						
12						
13						
14				POORLY GRADED GRAVEL with SAND (GP): see next page		



DEPTH (feet)	SAMPLES			DESCRIPTION NAME (USCS): color, moist, % by wt., plast. density, structure, cementation, react. w/HCl, geo. inter.	PID READING (ppm)	REMARKS
	Sample No.	Sample	Blows/ 6 inches			
15	PSZB 47-15			POORLY GRADED GRAVEL with SAND (GP): light gray (5Y 7/1), moist, ~80% gravel, ~20% fine to medium sand		
16						
17						
18						
19						
20	PSZB 47-20			~70% gravel, ~30% fine to medium sand		
21						
22						
23				POORLY GRADED SAND with GRAVEL (SP): light brown (7.5YR 6/3), moist, ~65% fine to medium sand, ~35% gravel		
24						
25	PSZB 47-25					
26						
27						
28				POORLY GRADED GRAVEL with SAND (GP): light brown (7.5YR 6/3), moist, ~75% gravel, ~25% fine to medium sand		
29						
30	PSZB 47-30					Boring backfilled with bentonite chips hydrated in place after each 5' lift Surface patched with asphalt
31				Bottom of boring at 30.5 ft bgs		

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PROJECT: AZUSA/IRWINDALE STUDY AREA Azusa and Irwindale, California				Log of Boring No. PSZB-48			
BORING LOCATION: PerkinElmer AOC				ELEVATION AND DATUM: 566.59 ft msl (NAVD 88)			
DRILLING CONTRACTOR: Layne Christenson, Co.				DATE STARTED: 3/2/06		DATE FINISHED: 3/2/06	
DRILLING METHOD: Dual Wall Air Percussion				TOTAL DEPTH (ft.). 40.5		MEASURING POINT. Ground surface	
DRILLING EQUIPMENT: Foremost Drills AP-1000				DEPTH TO WATER	FIRST NA	COMPL. NA	24 HRS. NA
SAMPLING METHOD: Cuttings from cyclone				LOGGED BY: A. Gonzalez			
HAMMER WEIGHT: NA		DROP: NA		RESPONSIBLE PROFESSIONAL: G. Rees			REG. NO. 6612

DEPTH (feet)	SAMPLES			DESCRIPTION	PID READING (ppm)	REMARKS
	Sample No.	Sample	Blows/ 6 inches	NAME (USCS): color, moist, % by wt., plast. density, structure, cementation, react. w/HCl, geo. inter.		
				Surface Elevation: 566.59 ft msl (NAVD 88)		
				~3" asphalt		
1	PSZB-48-1			POORLY GRADED GRAVEL with SAND (GP): brown (7.5YR 4/2), moist, ~75% gravel, ~25% fine to coarse sand		
2				gray (7.5YR 6/1), ~85% gravel, ~15% fine to coarse sand		
3	PSZB-48-2.5					Drilled to 40.5' bgs with 9" casing and hammer bit
4						Lithology assessed from cuttings collected through the cyclone
5	PSZB-48-5					
6						
7				light gray (7.5YR 7/1)		
8	PSZB-48-7.5					
9						
10	PSZB-48-10					
11						
12						
13				~75% gravel, ~25% fine to coarse sand		
14						

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Project No 7190 005.0

Page 1 of 3

DEPTH (feet)	SAMPLES			DESCRIPTION NAME (USCS): color, moist, % by wt., plast. density, structure, cementation, react. w/HCl, geo. inter.	PID READING (ppm)	REMARKS
	Sample No.	Sample	Blows/ 6 inches			
15	PSZB-48-15			POORLY GRADED GRAVEL with SAND (GP): continued		
16						
17						
18				gray (7.5YR 5/1), ~80% gravel, ~20% fine to coarse sand		
19						
20	PSZB-48-20					
21						
22						
23				brown (10YR 5/3), ~85% gravel, ~15% fine to coarse sand		
24						
25	PSZB-48-25					
26						
27						
28				light gray (7.5YR 7/1)		
29						
30	PSZB-48-30					
31						

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PROJECT: AZUSA/IRWINDALE STUDY AREA
Azusa and Irwindale, California

Log of Boring No. PSZB-48 (cont'd)

DEPTH (feet)	SAMPLES			DESCRIPTION NAME (USCS): color, moist, % by wt., plast. density, structure, cementation, react. w/HCl, geo. inter.	PID READING (ppm)	REMARKS
	Sample No.	Sample	Blows/ 6 inches			
32				POORLY GRADED GRAVEL with SAND (GP): continued		
33						
34						
35	PSZB-48-35					
36						
37						
38						
39						
40	PSZB-48-40					
41						Boring backfilled with bentonite chips and continuously hydrated Surface patched with asphalt
42						
43						
44						
45						
46						
47						
48						
				Bottom of boring at 40.5 ft bgs		

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Project No. 7190.005.0

Page 3 of 3

PROJECT: AZUSA/IRWINDALE STUDY AREA Azusa and Irwindale, California					Log of Boring No. PSZB-49				
BORING LOCATION: PerkinElmer					ELEVATION AND DATUM: 566.42 ft msl (NAVD 88)				
DRILLING CONTRACTOR: Layne Christenson, Co.					DATE STARTED: 3/30/05		DATE FINISHED: 3/30/05		
DRILLING METHOD: Dual Wall Air Percussion					TOTAL DEPTH (ft.): 40.5		MEASURING POINT: Ground surface		
DRILLING EQUIPMENT: Foremost Drills AP-1000					DEPTH TO WATER	FIRST NA	COMPL. NA	24 HRS. NA	
SAMPLING METHOD: Cuttings from cyclone					LOGGED BY: P. Jeffers				
HAMMER WEIGHT: NA			DROP: NA		RESPONSIBLE PROFESSIONAL: G. Rees			REG. NO. 6612	

DEPTH (feet)	SAMPLES			DESCRIPTION NAME (USCS): color, moist, % by wt., plast. density, structure, cementation, react. w/HCl, geo. inter.	PID READING (ppm)	REMARKS
	Sample No.	Sample	Blows/ 6 inches			
				Surface Elevation: 566.42 ft msl (NAVD 88)		
1	PSZB 49-1			~4" asphalt POORLY GRADED GRAVEL with SAND (GP): dark brown (7.5YR 3/4), moist, ~65% gravel, ~35% medium to coarse sand		Hand augered to 1.5 feet below ground surface (bgs)
2						Drilled to 40.5' bgs with 9" casing and hammer bit
3	PSZB 49-2.5					Lithology assessed from cuttings collected through the cyclone
4				POORLY GRADED SAND with GRAVEL (SP): brown (7.5YR 4/4), moist, ~70% fine to medium sand, ~30% gravel		
5	PSZB 49-5					
6						
7						
8	PSZB 49-7.5			POORLY GRADED GRAVEL with SAND (GP): light gray (5Y 7/1), moist, ~75% gravel, ~25% fine to medium sand		
9						
10	PSZB 49-10					
11						
12						
13						
14						



DEPTH (feet)	SAMPLES			DESCRIPTION NAME (USCS): color, moist, % by wt., plast. density, structure, cementation, react. w/HCl, geo. inter.	PID READING (ppm)	REMARKS
	Sample No.	Sample Blows/ 6 inches				
15	PSZB 49-15			POORLY GRADED GRAVEL with SAND (GP): continued ~85% gravel, ~15% fine to medium sand		
16						
17						
18						
19						
20	PSZB 49-20			~70% gravel, ~30% fine to medium sand		
21						
22						
23						
24						
25	PSZB 49-25			POORLY GRADED SAND with GRAVEL (SP): light brown (7.5YR 6/4), moist, ~75% fine to medium sand, ~25% gravel		
26						
27						
28						
29						
30	PSZB 49-30			POORLY GRADED GRAVEL with SAND (GP): light brown (7.5YR 6/4), moist, ~85% gravel, ~15% fine to medium sand		
31						

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PROJECT: AZUSA/IRWINDALE STUDY AREA
Azusa and Irwindale, California

Log of Boring No. PSZB-49 (cont'd)

DEPTH (feet)	SAMPLES			DESCRIPTION NAME (USCS): color, moist, % by wt., plast. density, structure, cementation, react. w/HCl, geo. inter.	PID READING (ppm)	REMARKS
	Sample No.	Sample	Blows/ 6 inches			
32				POORLY GRADED GRAVEL with SAND (GP): continued		
33				POORLY GRADED SAND (SP): brown (10YR 5/3), moist, ~95% medium sand, ~5% gravel		
34						
35	PSZB 49-35					
36						
37						
38						
39				POORLY GRADED GRAVEL with SAND (GP): light brown (7.5YR 6/4), moist, ~60% gravel, ~40% fine to medium sand		
40	PSZB 49-40					Boring backfilled with bentonite chips hydrated in place after each 5' lift Surface patched with asphalt
41				Bottom of boring at 40.5 ft bgs		
42						
43						
44						
45						
46						
47						
48						

RMRK3



Geomatrix Consultants

Project No. 7190.004.0

Page 3 of 3

PROJECT: AZUSA/IRWINDALE STUDY AREA Azusa and Irwindale, California					Log of Boring No. PSZB-50				
BORING LOCATION: PerkinElmer					ELEVATION AND DATUM 570.89 ft msl (NAVD 88)				
DRILLING CONTRACTOR: Layne Christenson, Co.					DATE STARTED 2/14/06		DATE FINISHED: 2/14/06		
DRILLING METHOD: Dual Wall Air Percussion					TOTAL DEPTH (ft): 40.5		MEASURING POINT: Ground surface		
DRILLING EQUIPMENT: Foremost Drills AP-1000					DEPTH TO WATER	FIRST NA	COMPL. NA	24 HRS. NA	
SAMPLING METHOD: Cuttings from cyclone					LOGGED BY: K. Zeiler				
HAMMER WEIGHT: NA			DROP: NA		RESPONSIBLE PROFESSIONAL: G. Rees			REG NO 6612	

DEPTH (feet)	SAMPLES			Blows/ 6 inches	DESCRIPTION NAME (USCS) color, moist, % by wt, plast. density, structure, cementation, react. w/HCl, geo. inter	PID READING (ppm)	REMARKS
	Sample No.	Sample No.	Sample No.				
					Surface Elevation: 570.89 ft msl (NAVD 88)		
					~4" asphalt		
1	PSZB-50-1						Air knifed to 5 feet below ground surface (bgs) by BC ² Environmental on 2/8/06
2							1' and 2.5' samples collected from sidewalls of boring and 5' sample with a hand auger on 2/8/06
3	PSZB-50-2.5						Drilled to 40.5' bgs with 9" casing and hammer bit
4							
5	PSZB-50-5						Lithology assessed from cuttings collected through the cyclone
6							
7					POORLY GRADED GRAVEL with SAND (GP): grayish brown (2.5Y 5/2), moist, ~55% gravel, ~45% fine to coarse sand, trace fines		
8	PSZB-50-7.5						
9					~65% gravel, ~35% fine to coarse sand, trace fines		Difficult drilling
10	PSZB-50-10						
11							
12							
13							
14							

Geomatrix Consultants

Project No 7190 005.0

Page 1 of 3

RMRK3

DEPTH (feet)	SAMPLES			DESCRIPTION NAME (USCS): color, moist, % by wt., plast. density, structure, cementation, react. w/HCl, geo. inter.	PID READING (ppm)	REMARKS
	Sample No.	Sample Blows/ 6 inches				
15	PSZB-50-15			POORLY GRADED GRAVEL with SAND (GP): continued		
16						
17						
18						
19						
20	PSZB-50-20					
21						
22						
23				POORLY GRADED GRAVEL with SILT and SAND (GP-GM): brown (10YR 5/3), moist, ~60% gravel, ~30% fine to coarse sand, ~10% nonplastic fines		
24						
25	PSZB-50-25					
26						
27						
28				POORLY GRADED GRAVEL with SAND (GP): brown (10YR 5/3), moist, ~60% gravel, ~40% fine to coarse sand, trace fines		
29						
30	PSZB-50-30					
31						

RMRK3



DEPTH (feet)	SAMPLES			DESCRIPTION NAME (USCS): color, moist, % by wt., plast. density, structure, cementation, react. w/HCl, geo. inter.	PID READING (ppm)	REMARKS
	Sample No.	Sample	Blows/ 6 inches			
32				POORLY GRADED GRAVEL with SAND (GP): continued		
33				~55% gravel, ~45% fine to coarse sand, trace fines		
34						
35	PSZB-50-35					
36						
37						
38				~65% gravel, ~35% fine to coarse sand, trace fines		
39						
40	PSZB-50-40					
41				Bottom of boring at 40.5 ft bgs		Boring backfilled with bentonite chips and continuously hydrated Surface patched with asphalt
42						
43						
44						
45						
46						
47						
48						

PROJECT: AZUSA/IRWINDALE STUDY AREA Azusa and Irwindale, California					Log of Boring No. PSZB-51				
BORING LOCATION: PerkinElmer					ELEVATION AND DATUM: 571.17 ft msl (NAVD 88)				
DRILLING CONTRACTOR: Layne Christenson, Co.					DATE STARTED: 2/14/06		DATE FINISHED: 2/14/06		
DRILLING METHOD: Dual Wall Air Percussion					TOTAL DEPTH (ft.): 10.5		MEASURING POINT: Ground surface		
DRILLING EQUIPMENT: Foremost Drills AP-1000					DEPTH TO WATER	FIRST NA	COMPL. NA	24 HRS. NA	
SAMPLING METHOD: Cuttings from cyclone or as noted in remarks					LOGGED BY: K. Zeiler				
HAMMER WEIGHT: NA			DROP: NA		RESPONSIBLE PROFESSIONAL: G. Rees			REG. NO. 6612	

DEPTH (feet)	SAMPLES			DESCRIPTION	PID READING (ppm)	REMARKS
	Sample No.	Sample	Blows/ 6 inches	NAME (USCS): color, moist, % by wt., plast. density, structure, cementation, react. w/HCl, geo. inter.		
				Surface Elevation: 571.17 ft msl (NAVD 88)		
				~3" asphalt		
1	PSZB-51-1					Air knifed to 5 feet below ground surface (bgs) by BC² Environmental on 2/8/06
2						1' and 2.5' samples collected from sidewalls of boring and 5' sample with a hand auger on 2/8/06
3	PSZB-51-2.5					Drilled to 10.5' bgs with 9" casing and hammer bit
4						Lithology assessed from cuttings collected through the cyclone
5	PSZB-51-5					
6						
7				POORLY GRADED GRAVEL with SAND (GP): grayish brown (2.5Y 4/2), moist, ~60% gravel, ~40% fine to coarse sand, trace fines		
8	PSZB-51-7.5					
9						
10	PSZB-51-10					Refusal at 10' bgs
11				Bottom of boring at 10.5 ft bgs		Boring backfilled with bentonite chips and continuously hydrated Surface patched with asphalt
12						
13						
14						

Geomatrix Consultants

Project No. 7190.005.0

Page 1 of 1

RMRK3

PROJECT: AZUSA/IRWINDALE STUDY AREA Azusa and Irwindale, California					Log of Boring No. PSZB-51A				
BORING LOCATION: PerkinElmer					ELEVATION AND DATUM: 571.21 ft msl (NAVD 88)				
DRILLING CONTRACTOR: Layne Christenson, Co.					DATE STARTED: 2/15/06		DATE FINISHED: 2/15/06		
DRILLING METHOD: Dual Wall Air Percussion					TOTAL DEPTH (ft.): 40.5		MEASURING POINT: Ground surface		
DRILLING EQUIPMENT: Foremost Drills AP-1000					DEPTH TO WATER	FIRST NA	COMPL. NA	24 HRS. NA	
SAMPLING METHOD: Cuttings from cyclone					LOGGED BY: K. Zeiler				
HAMMER WEIGHT: NA			DROP: NA		RESPONSIBLE PROFESSIONAL: G. Rees			REG. NO. 6612	

DEPTH (feet)	SAMPLES			DESCRIPTION NAME (USCS): color, moist, % by wt., plast. density, structure, cementation, react. w/HCl, geo. inter.	PID READING (ppm)	REMARKS
	Sample No.	Sample	Blows/ 6 inches			
				Surface Elevation: 571.21 ft msl (NAVD 88)		
1				~3" asphalt SEE BORING LOG FOR PSZB-51 (located approximately 6 feet west) FOR LITHOLOGY TO 10' bgs		Air knifed to 5 feet below ground surface (bgs) by BC ² Environmental on 2/14/06
2						Drilled to 40.5' bgs with 9" casing and hammer bit
3						
4						
5						
6						
7						
8						
9						
10						
11						
12						
13				POORLY GRADED GRAVEL with SAND (GP): yellowish brown (10YR 5/4), moist, ~55% gravel, ~40% fine to coarse sand, ~5% fines		
14						



DEPTH (feet)	SAMPLES			DESCRIPTION NAME (USCS): color, moist, % by wt., plast. density, structure, cementation, react. w/HCl, geo. inter.	PID READING (ppm)	REMARKS
	Sample No.	Sample	Blows/ 6 inches			
15	PSZB-51A-15			POORLY GRADED GRAVEL with SAND (GP): continued		
16						
17						
18				brown (10YR 5/3), ~60% gravel, ~40% fine to coarse sand, trace fines		
19						
20	PSZB-51A-20					
21						
22						
23				light olive brown (2.5Y 5/4), ~75% gravel, ~20% fine to coarse sand, ~5% fines		
24						
25	PSZB-51A-25					
26						
27						
28				grayish brown (2.5Y 5/2), ~65% gravel, ~35% fine to coarse sand, trace fines		
29						
30	PSZB-51A-30					
31						

RMRK3



DEPTH (feet)	SAMPLES			DESCRIPTION NAME (USCS): color, moist, % by wt., plast. density, structure, cementation, react. w/HCl, geo. inter.	PID READING (ppm)	REMARKS
	Sample No.	Sample	Blows/ 6 inches			
32				POORLY GRADED GRAVEL with SAND (GP): continued		
33						
34						
35	PSZB- 51A- 35					
36						
37						
38				~80% gravel, ~20% fine to coarse sand, trace fines ▼		
39						
40	PSZB- 51A- 40					
41				Bottom of boring at 40.5 ft bgs		Boring backfilled with bentonite chips and continuously hydrated Surface patched with asphalt
42						
43						
44						
45						
46						
47						
48						

PROJECT: AZUSA/IRWINDALE STUDY AREA Azusa and Irwindale, California				Log of Boring No. PSZB-52			
BORING LOCATION: PerkinElmer				ELEVATION AND DATUM: 569.66 ft msl (NAVD 88)			
DRILLING CONTRACTOR: Layne Christenson, Co.				DATE STARTED: 3/2/06		DATE FINISHED: 3/2/06	
DRILLING METHOD: Dual Wall Air Percussion				TOTAL DEPTH (ft.): 40.5		MEASURING POINT: Ground surface	
DRILLING EQUIPMENT: Foremost Drills AP-1000				DEPTH TO WATER	FIRST NA	COMPL. NA	24 HRS. NA
SAMPLING METHOD: Cuttings from cyclone or as noted in remarks				LOGGED BY: P. Jeffers			
HAMMER WEIGHT: NA		DROP: NA		RESPONSIBLE PROFESSIONAL: G. Rees			REG. NO. 6612

DEPTH (feet)	SAMPLES			DESCRIPTION	PID READING (ppm)	REMARKS
	Sample No.	Sample	Blows/ 6 inches	NAME (USCS): color, moist, % by wt., plast. density, structure, cementation, react w/HCl, geo. inter.		
				Surface Elevation: 569.66 ft msl (NAVD 88)		
1	PSZB-52-1			~3" asphalt POORLY GRADED GRAVEL with SAND (GP): brown (7.5YR 4/3), moist, ~75% gravel, ~25% fine to coarse sand, trace fines		Hand augered to 2.5 feet below ground surface (bgs)
2						1' and 2.5' samples collected from sidewalls of boring
3	PSZB-52-2.5					Drilled to 40.5' bgs with 9" casing and hammer bit
4				light gray (Gley 7/1), ~70% gravel, ~30% fine to coarse sand		Lithology assessed from cuttings collected through the cyclone
5	PSZB-52-5					
6						
7						
8	PSZB-52-7.5					
9				~85% gravel, ~15% fine to coarse sand		
10	PSZB-52-10					
11						
12						
13						
14						

Geomatrix Consultants

Project No. 7190.005.0
Page 1 of 3

DEPTH (feet)	SAMPLES			DESCRIPTION NAME (USCS): color, moist, % by wt., plast. density, structure, cementation, react. w/HCl, geo. inter.	PID READING (ppm)	REMARKS
	Sample No.	Sample	Blows/ 6 inches			
15	PSZB-52-15			POORLY GRADED GRAVEL with SAND (GP): continued ~80% gravel, ~20% fine to coarse sand		
16						
17						
18						
19						
20	PSZB-52-20					
21						
22						
23						
24						
25	PSZB-52-25			POORLY GRADED SAND with GRAVEL (SP): brown (10YR 5/3), moist, ~70% fine to coarse sand, ~30% gravel, trace fines		
26						
27						
28						
29						
30	PSZB-52-30					
31						



DEPTH (feet)	SAMPLES			DESCRIPTION NAME (USCS): color, moist, % by wt., plast density, structure, cementation, react. w/HCl, geo. inter.	PID READING (ppm)	REMARKS
	Sample No.	Sample	Blows/ 6 inches			
32				POORLY GRADED SAND with GRAVEL (SP): continued		
33				~80% fine to coarse sand, ~20% gravel		
34						
35	PSZB-52-35					
36						
37						
38				~85% fine to coarse sand, ~15% gravel		
39						
40	PSZB-52-40					
41				Bottom of boring at 40.5 ft bgs		Boring backfilled with bentonite chips and continuously hydrated Surface patched with asphalt
42						
43						
44						
45						
46						
47						
48						

RMRK3



Geomatrix Consultants

Project No. 7190.005 0

Page 3 of 3

PROJECT: AZUSA/IRWINDALE STUDY AREA Azusa and Irwindale, California						Log of Boring No. PSZB-53			
BORING LOCATION PerkinElmer						ELEVATION AND DATUM: 568.65 ft msl (NAVD 88)			
DRILLING CONTRACTOR: Layne Christenson, Co.						DATE STARTED: 2/21/06		DATE FINISHED: 2/21/06	
DRILLING METHOD: Dual Wall Air Percussion						TOTAL DEPTH (ft.): 12.5		MEASURING POINT: Ground surface	
DRILLING EQUIPMENT: Foremost Drills AP-1000						DEPTH TO WATER NA		COMPL NA	
SAMPLING METHOD: Cuttings from cyclone or as noted in remarks						LOGGED BY: K. Zeiler		24 HRS NA	
HAMMER WEIGHT NA				DROP NA		RESPONSIBLE PROFESSIONAL: G. Rees			REG. NO. 6612

DEPTH (feet)	SAMPLES			DESCRIPTION NAME (USCS) color, moist, % by wt., plast density, structure, cementation, react. w/HCl, geo inter	PID READING (ppm)	REMARKS
	Sample No.	Sample	Blows/ 6 inches			
				Surface Elevation 568.65 ft msl (NAVD 88)		
1	PSZB-53-1			~3" asphalt POORLY GRADED SAND with GRAVEL (SP): dark brown (10YR 4/3), moist, ~80% fine to coarse sand, ~15% gravel, ~5% fines ~60% fine to coarse sand, ~35% gravel, ~5% fines		Hand augered to 2 feet below ground surface (bgs) 1' and 2.5' samples collected from sidewalls of boring
2						
3	PSZB-53-2.5					Large cobbles
4				POORLY GRADED GRAVEL with SAND (GP): grayish brown (2.5Y 5/2), moist, ~70% gravel, ~30% fine to coarse sand, trace fines		Drilled to 12.5' bgs with 9" casing and hammer bit
5	PSZB-53-5					Lithology assessed from cuttings collected through the cyclone
6						
7				POORLY GRADED GRAVEL (GP): grayish brown (2.5Y 5/2), moist, ~100% gravel, trace fine to coarse sand, trace fines		
8	PSZB-53-7.5					
9				POORLY GRADED GRAVEL with SAND (GP): grayish brown (2.5Y 5/2), moist, ~55% gravel, ~45% fine to coarse sand, trace fines		
10	PSZB-53-10					
11						
12						Difficult drilling
13				Bottom of boring at 12.5 ft bgs		Refusal at 12.5' bgs Boring backfilled with bentonite chips and continuously hydrated Surface patched with asphalt
14						



PROJECT: AZUSA/IRWINDALE STUDY AREA Azusa and Irwindale, California					Log of Boring No. PSZB-53A				
BORING LOCATION: PerkinElmer					ELEVATION AND DATUM: 568.69 ft msl (NAVD 88)				
DRILLING CONTRACTOR: Layne Christenson, Co.					DATE STARTED: 2/22/06		DATE FINISHED: 2/22/06		
DRILLING METHOD: Dual Wall Air Percussion					TOTAL DEPTH (ft.): 40.5		MEASURING POINT: Ground surface		
DRILLING EQUIPMENT: Foremost Drills AP-1000					DEPTH TO WATER	FIRST NA	COMPL. NA	24 HRS. NA	
SAMPLING METHOD: Cuttings from cyclone					LOGGED BY: K. Zeiler				
HAMMER WEIGHT: NA			DROP: NA		RESPONSIBLE PROFESSIONAL: G. Rees			REG. NO. 6612	
DEPTH (feet)	SAMPLES			DESCRIPTION NAME (USCS): color, moist, % by wt, plast. density, structure, cementation, react. w/HCl, geo inter.	PID READING (ppm)	REMARKS			
	Sample No	Sample	Blows/ 6 inches						
				Surface Elevation: 568.69 ft msl (NAVD 88)					
				~3" asphalt					
1				SEE BORING LOG FOR PSZB-53 (located approximately 6 feet west) FOR LITHOLOGY TO 12.5' bgs					
2									
3						Drilled to 40.5' bgs with 9" casing and hammer bit			
4						Lithology assessed from cuttings collected through the cyclone			
5									
6									
7									
8									
9									
10									
11									
12									
13				POORLY GRADED GRAVEL with SAND (GP): grayish brown (2.5Y 5/2), moist, ~65% gravel, ~35% fine to coarse sand, trace fines					
14									

RMRK3



Geomatrix Consultants

Project No 7190 005 0

Page 1 of 3

DEPTH (feet)	SAMPLES			DESCRIPTION NAME (USCS): color, moist, % by wt., plast. density, structure, cementation, react. w/HCl, geo. inter.	PID READING (ppm)	REMARKS
	Sample No.	Sample	Blows/ 6 inches			
15	PSZB-53A-15			POORLY GRADED GRAVEL with SAND (GP): continued ~55% gravel, ~45% fine to coarse sand, trace fines		
16						
17						
18						
20	PSZB-53A-20					
21						
22						
23						
24						
25	PSZB-53A-25					
26						
27						
28						
29						
30	PSZB-53A-30			~70% gravel, ~30% fine to coarse sand, trace fines		
31						



DEPTH (feet)	SAMPLES			DESCRIPTION NAME (USCS): color, moist, % by wt., plast. density, structure, cementation, react. w/HCl, geo. inter.	PID READING (ppm)	REMARKS
	Sample No.	Sample	Blows/ 6 inches			
32				POORLY GRADED GRAVEL with SAND (GP): continued		
33						
34						
35	PSZB-53A-35					
36						
37						
38						
39						
40	PSZB-53A-40					
41						
42				Bottom of boring at 40.5 ft bgs		
43						
44						
45						
46						
47						
48						

~60% gravel, ~40% fine to coarse sand, trace fines

Boring backfilled with bentonite chips and continuously hydrated
Surface patched with asphalt

RMRK3



PROJECT: AZUSA/IRWINDALE STUDY AREA Azusa and Irwindale, California				Log of Boring No. PSZB-54			
BORING LOCATION: PerkinElmer				ELEVATION AND DATUM 566.99 ft msl (NAVD 88)			
DRILLING CONTRACTOR: Layne Christenson, Co.				DATE STARTED 2/21/06		DATE FINISHED: 2/21/06	
DRILLING METHOD: Dual Wall Air Percussion				TOTAL DEPTH (ft): 12.5		MEASURING POINT: Ground surface	
DRILLING EQUIPMENT: Foremost Drills AP-1000				DEPTH TO WATER	FIRST NA	COMPL NA	24 HRS. NA
SAMPLING METHOD: Cuttings from cyclone or as noted in remarks				LOGGED BY: K. Zeiler			
HAMMER WEIGHT: NA		DROP: NA		RESPONSIBLE PROFESSIONAL: G. Rees			REG. NO. 6612

DEPTH (feet)	SAMPLES			DESCRIPTION NAME (USCS): color, moist, % by wt., plast. density, structure, cementation, react w/HCl, geo. inter.	PID READING (ppm)	REMARKS
	Sample No	Sample	Blows/ 6 inches			
				Surface Elevation: 566.99 ft msl (NAVD 88)		
				~3" asphalt		
				CONSTRUCTION FILL: sand and gravel		Hand augered to 2.5 feet below ground surface (bgs)
1	PSZB-54-1			large asphalt clasts at 20 inches bgs		1' and 2.5' samples collected from sidewalls of boring
2						Large asphalt clasts or layer at 20" bgs
3	PSZB-54-2.5					Drilled to 40.5' bgs with 9" casing and hammer bit
4				POORLY GRADED GRAVEL with SAND (GP): grayish brown (2.5Y 5/2), moist, ~65% gravel, ~35% fine to coarse sand, trace fines		Lithology assessed from cuttings collected through the cyclone
5	PSZB-54-5					
6						
7				~60% gravel, ~40% fine to coarse sand, trace fines		
8	PSZB-54-7.5					
9						
10	PSZB-54-10					Difficult drilling
11						
12						
13				POORLY GRADED SAND (SP): grayish brown (10YR 5/2), moist, ~90% fine to coarse sand, ~10% gravel, trace fines		
14						

RMRK3



Geomatrix Consultants

Project No. 7190.005 0

Page 1 of 3

DEPTH (feet)	SAMPLES			DESCRIPTION NAME (USCS): color, moist, % by wt., plast. density, structure, cementation, react. w/HCl, geo. inter.	PID READING (ppm)	REMARKS
	Sample No.	Sample	Blows/ 6 inches			
15	PSZB-54-15			POORLY GRADED SAND (SP): continued		
16						
17						
18				POORLY GRADED SAND with GRAVEL (SP): grayish brown (10YR 5/2), moist, ~70% fine to coarse sand, ~30% gravel, trace fines		
19						
20	PSZB-54-20					
21						
22						
23				~60% fine to coarse sand, ~40% gravel, trace fines		
24						
25	PSZB-54-25					
26						
27						
28				~75% fine to coarse sand, ~25% gravel, trace fines		
29						
30	PSZB-54-30					
31						



Log of Boring No. PSZB-54 (cont'd)

DEPTH (feet)	SAMPLES			DESCRIPTION NAME (USCS): color, moist, % by wt., plast. density, structure, cementation, react. w/HCl, geo. inter.	PID READING (ppm)	REMARKS
	Sample No.	Sample	Blows/ 6 inches			
32				POORLY GRADED SAND with GRAVEL (SP): continued		
33				POORLY GRADED GRAVEL with SAND (GP): grayish brown (2.5Y 5/2), moist, ~65% gravel, ~35% fine to coarse sand, trace fines		
34						
35	PSZB-54-35					Cobbles
36						
37						
38				~80% gravel, ~20% fine to coarse sand, trace fines		
39						
40	PSZB-54-40					Boring backfilled with bentonite chips and continuously hydrated Surface patched with asphalt
41				Bottom of boring at 40.5 ft bgs		
42						
43						
44						
45						
46						
47						
48						

RMRK3



Geomatrix Consultants

Project No. 7190.005.0

Page 3 of 3

PROJECT: AZUSA/IRWINDALE STUDY AREA Azusa and Irwindale, California					Log of Boring No. PSZB-55				
BORING LOCATION: PerkinElmer					ELEVATION AND DATUM: 565.77 ft msl (NAVD 88)				
DRILLING CONTRACTOR: Layne Christenson, Co.					DATE STARTED: 2/17/06		DATE FINISHED: 2/17/06		
DRILLING METHOD: Dual Wall Air Percussion					TOTAL DEPTH (ft.): 40.5		MEASURING POINT: Ground surface		
DRILLING EQUIPMENT: Foremost Drills AP-1000					DEPTH TO WATER	FIRST NA	COMPL. NA	24 HRS. NA	
SAMPLING METHOD: Cuttings from cyclone or as noted in remarks					LOGGED BY: K. Zeiler				
HAMMER WEIGHT: NA			DROP: NA		RESPONSIBLE PROFESSIONAL: G. Rees			REG. NO. 6612	

DEPTH (feet)	SAMPLES			DESCRIPTION	PID READING (ppm)	REMARKS
	Sample No.	Sample	Blows/ 6 inches	NAME (USCS): color, moist, % by wt., plast. density, structure, cementation, react. w/HCl, geo. inter.		
				Surface Elevation: 565.77 ft msl (NAVD 88)		
				~3" asphalt		
1	PSZB-55-1					Air knifed to 5 feet below ground surface (bgs) by BC² Environmental on 2/9/06
2						1' and 2.5' samples collected from sidewalls of boring and 5' sample with a hand auger on 2/9/06
3	PSZB-55-2.5					Drilled to 40.5' bgs with 9" casing and hammer bit
4						Lithology assessed from cuttings collected through the cyclone
5	PSZB-55-5					
6						
7				POORLY GRADED GRAVEL (GP): grayish brown (2.5Y 5/2), moist, ~90% gravel, ~10% fine to coarse sand, trace fines		
8	PSZB-55-7.5					Cobbles
9				POORLY GRADED SAND with GRAVEL (SP): grayish brown (2.5Y 5/2), moist, ~75% fine to coarse sand, ~25% gravel, trace fines		
10	PSZB-55-10					
11						
12						
13				POORLY GRADED GRAVEL (GP): grayish brown (2.5Y 5/2), moist, ~90% gravel, ~10% fine to coarse sand, trace fines		
14						

Geomatrix Consultants

Project No. 7190.005.0

Page 1 of 3

RMRK3

DEPTH (feet)	SAMPLES			DESCRIPTION NAME (USCS): color, moist, % by wt., plast. density, structure, cementation, react. w/HCl, geo. inter.	PID READING (ppm)	REMARKS
	Sample No.	Sample Blows/ 6 inches				
15	PSZB-55-15			POORLY GRADED GRAVEL (GP): continued		
16						
17						
18				POORLY GRADED GRAVEL with SAND (GP): grayish brown (2.5Y 5/2), moist, ~65% gravel, ~35% fine to coarse sand, trace fines		Difficult drilling
19						
20	PSZB-55-20					
21						
22						
23				~80% gravel, ~20% fine to coarse sand, trace fines		
24						
25	PSZB-55-25					
26						
27						
28				POORLY GRADED SAND with GRAVEL (SP): grayish brown (2.5Y 5/2), moist, ~75% fine to coarse sand, ~25% gravel, trace fines		
29						
30	PSZB-55-30					
31						

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PROJECT: AZUSA/IRWINDALE STUDY AREA
Azusa and Irwindale, California

Log of Boring No. PSZB-55 (cont'd)

DEPTH (feet)	SAMPLES			DESCRIPTION NAME (USCS): color, moist, % by wt., plast. density, structure, cementation, react. w/HCl, geo. inter.	PID READING (ppm)	REMARKS
	Sample No.	Sample	Blows/ 6 inches			
32				POORLY GRADED SAND with GRAVEL (SP): continued ~55% fine to coarse sand, ~45% gravel, trace fines ↓		Difficult drilling
33						
34						
35	PSZB-55-35					
36						
37						
38						
39						
40	PSZB-55-40					
41				Bottom of boring at 40.5 ft bgs		Boring backfilled with bentonite chips and continuously hydrated Surface patched with asphalt
42						
43						
44						
45						
46						
47						
48						

RMRK3



Geomatrix Consultants

Project No. 7190.005.0

Page 3 of 3

PROJECT: AZUSA/IRWINDALE STUDY AREA Azusa and Irwindale, California					Log of Boring No. PSZB-56				
BORING LOCATION: PerkinElmer					ELEVATION AND DATUM: 565.17 ft msl (NAVD 88)				
DRILLING CONTRACTOR: Layne Christenson, Co.					DATE STARTED: 2/15/06		DATE FINISHED: 2/15/06		
DRILLING METHOD: Dual Wall Air Percussion					TOTAL DEPTH (ft.): 40.5		MEASURING POINT: Ground surface		
DRILLING EQUIPMENT: Foremost Drills AP-1000					DEPTH TO WATER	FIRST NA	COMPL. NA	24 HRS. NA	
SAMPLING METHOD: Cuttings from cyclone or as noted in remarks					LOGGED BY: K. Zeiler				
HAMMER WEIGHT: NA			DROP: NA		RESPONSIBLE PROFESSIONAL: G. Rees			REG. NO. 6612	

DEPTH (feet)	SAMPLES			DESCRIPTION	PID READING (ppm)	REMARKS
	Sample No.	Sample	Blows/ 6 inches	NAME (USCS): color, moist, % by wt., plast. density, structure, cementation, react. w/HCl, geo. inter.		
				Surface Elevation: 565.17 ft msl (NAVD 88)		
				~3" asphalt		
1	PSZB-56-1					Air knifed to 5 feet below ground surface (bgs) by BC ² Environmental on 2/14/06
2						1' and 2.5' samples collected from sidewalls of boring and 5' sample with a hand auger on 2/14/06
3	PSZB-56-2.5					Drilled to 40.5' bgs with 9" casing and hammer bit
4						Lithology assessed from cuttings collected through the cyclone
5	PSZB-56-5					
6						
7				POORLY GRADED GRAVEL with SAND (GP): grayish brown (2.5Y 5/2), moist, ~85% gravel, ~15% fine to coarse sand, trace fines		Cobbles
8	PSZB-56-7.5					
9				~65% gravel, ~35% fine to coarse sand, trace fines		
10	PSZB-56-10					
11						
12						
13						
14						



DEPTH (feet)	SAMPLES			DESCRIPTION NAME (USCS): color, moist, % by wt., plast. density, structure, cementation, react. w/HCl, geo. inter.	PID READING (ppm)	REMARKS
	Sample No.	Sample	Blows/ 6 inches			
15	PSZB-56-15			POORLY GRADED GRAVEL with SAND (GP): continued		
16						
17						
18						
19						
20	PSZB-56-20					
21						
22						
23				~70% gravel, ~30% fine to coarse sand, trace fines		
24						
25	PSZB-56-25					
26						
27						
28				POORLY GRADED SAND with GRAVEL (SP): grayish brown (2.5Y 5/2), moist, ~60% fine to coarse sand, ~40% gravel, trace fines		
29						
30	PSZB-56-30					
31						

RMRK3



DEPTH (feet)	SAMPLES			DESCRIPTION NAME (USCS): color, moist, % by wt., plast. density, structure, cementation, react. w/HCl, geo. inter.	PID READING (ppm)	REMARKS
	Sample No.	Sample	Blows/ 6 inches			
32				POORLY GRADED SAND with GRAVEL (SP): continued ~80% fine to coarse sand, ~20% gravel, trace fines ↓		
33						
34						
35	PSZB-56-35					
36						
37						
38						
39						
40	PSZB-56-40					
41						Boring backfilled with bentonite chips and continuously hydrated Surface patched with asphalt
42				Bottom of boring at 40.5 ft bgs		
43						
44						
45						
46						
47						
48						

RMK3



Geomatrix Consultants

Project No. 7190.005.0

Page 3 of 3

PROJECT: AZUSA/IRWINDALE STUDY AREA Azusa and Irwindale, California					Log of Boring No. PSZB-57				
BORING LOCATION: PerkinElmer					ELEVATION AND DATUM: 565.04 ft msl (NAVD 88)				
DRILLING CONTRACTOR: Layne Christenson, Co.					DATE STARTED: 2/14/06		DATE FINISHED: 2/14/06		
DRILLING METHOD: Dual Wall Air Percussion					TOTAL DEPTH (ft.): 40.5		MEASURING POINT: Ground surface		
DRILLING EQUIPMENT: Foremost Drills AP-1000					DEPTH TO WATER	FIRST NA	COMPL. NA	24 HRS. NA	
SAMPLING METHOD: Cuttings from cyclone or as noted in remarks					LOGGED BY: K. Zeiler				
HAMMER WEIGHT: NA			DROP: NA		RESPONSIBLE PROFESSIONAL: G. Rees			REG. NO. 6612	

DEPTH (feet)	SAMPLES			DESCRIPTION	PID READING (ppm)	REMARKS
	Sample No.	Sample	Blows/ 6 inches	NAME (USCS): color, moist, % by wt., plast. density, structure, cementation, react. w/HCl, geo. inter.		
				Surface Elevation: 565.04 ft msl (NAVD 88)		
				~3" asphalt		
1	PSZB-57-1					Air knifed to 5 feet below ground surface (bgs) by BC ² Environmental
2						1' and 2.5' samples collected from sidewalls of boring
3	PSZB-57-2.5					Drilled to 40.5' bgs with 9" casing and hammer bit
4						Lithology assessed from cuttings collected through the cyclone
5						
6	PSZB-57-6					Samples collected at 6' and 7.5' bgs contained asphalt suspect slough of material from above
7						
8	PSZB-57-7.5					
9						
10	PSZB-57-10					
11						
12						
13						
14						

Geomatrix Consultants		Project No. 7190.005.0	Page 1 of 3
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RMRK3

DEPTH (feet)	SAMPLES			DESCRIPTION NAME (USCS): color, moist, % by wt., plast. density, structure, cementation, react. w/HCl, geo. inter.	P/D READING (ppm)	REMARKS
	Sample No.	Sample Blows/ 6 inches				
15	PSZB-57-15			POORLY GRADED GRAVEL with SAND (GP): continued		
16						
17						
18				POORLY GRADED SAND with GRAVEL (SP): grayish brown (2.5Y 5/2), moist, ~55% fine to coarse sand, ~45% gravel, trace fines		
19						
20	PSZB-57-20					Difficult drilling
21						
22						
23				POORLY GRADED GRAVEL with SAND (GP): grayish brown (2.5Y 5/2), moist, ~60% gravel, ~40% fine to coarse sand, trace fines		
24						
25	PSZB-57-25					
26						
27						
28				~70% gravel, ~30% fine to coarse sand, trace fines		
29						
30	PSZB-57-30					
31						

RMRK3



DEPTH (feet)	SAMPLES			DESCRIPTION NAME (USCS): color, moist, % by wt., plast. density, structure, cementation, react. w/HCl, geo. inter.	PID READING (ppm)	REMARKS
	Sample No.	Sample	Blows/ 6 inches			
32				POORLY GRADED GRAVEL with SAND (GP): continued		Difficult drilling
33				~80% gravel, ~20% fine to coarse sand, trace fines		
34						
35	PSZB-57-35					
36						
37						
38				~65% gravel, ~35% fine to coarse sand, trace fines		
39						
40	PSZB-57-40					
41				Bottom of boring at 40.5 ft bgs		Boring backfilled with bentonite chips and continuously hydrated Surface patched with asphalt
42						
43						
44						
45						
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47						
48						

RMRK3



Geomatrix Consultants

Project No. 7190.005.0

Page 3 of 3

PROJECT: AZUSA/IRWINDALE STUDY AREA Azusa and Irwindale, California					Log of Boring No. PSZB-58				
BORING LOCATION: PerkinElmer					ELEVATION AND DATUM: 564.75 ft msl (NAVD 88)				
DRILLING CONTRACTOR: Layne Christenson, Co.					DATE STARTED: 2/16/06		DATE FINISHED: 2/16/06		
DRILLING METHOD: Dual Wall Air Percussion					TOTAL DEPTH (ft.): 40.5		MEASURING POINT: Ground surface		
DRILLING EQUIPMENT: Foremost Drills AP-1000					DEPTH TO WATER	FIRST NA	COMPL. NA	24 HRS. NA	
SAMPLING METHOD: Cuttings from cyclone or as noted in remarks					LOGGED BY: K. Zeiler				
HAMMER WEIGHT: NA			DROP: NA		RESPONSIBLE PROFESSIONAL: G. Rees			REG. NO. 6612	

DEPTH (feet)	SAMPLES			Blows/ 6 inches	DESCRIPTION	PID READING (ppm)	REMARKS
	Sample No.	Sample	Blows/ 6 inches		NAME (USCS): color, moist, % by wt., plast. density, structure, cementation, react. w/HCl, geo. inter.		
					Surface Elevation: 564.75 ft msl (NAVD 88)		
					~3" asphalt		
1	PSZB-58-1						Air knifed to 5 feet below ground surface (bgs) by BC ² Environmental on 2/9/06
2							1' and 2.5' samples collected from sidewalls of boring and 5' sample with a hand auger on 2/9/06
3	PSZB-58-2.5						Drilled to 40.5' bgs with 9" casing and hammer bit
4							Lithology assessed from cuttings collected through the cyclone
5	PSZB-58-5						
6							
7					POORLY GRADED SAND with GRAVEL (SP): brown (10YR 5/3), moist, ~75% fine to coarse sand, ~25% gravel, trace fines		
8	PSZB-58-7.5						
9					POORLY GRADED GRAVEL with SAND (GP): grayish brown (10YR 5/2), moist, ~60% gravel, ~40% fine to coarse sand, trace fines		
10	PSZB-58-10						
11							
12							
13					~70% gravel, ~30% fine to coarse sand, trace fines		
14							



DEPTH (feet)	SAMPLES			DESCRIPTION NAME (USCS): color, moist, % by wt., plast. density, structure, cementation, react. w/HCl, geo. inter.	PID READING (ppm)	REMARKS
	Sample No.	Sample	Blows/ 6 inches			
15	PSZB-58-15			POORLY GRADED GRAVEL with SAND (GP): continued ~60% gravel, ~40% fine to coarse sand, trace fines		
16						
17						
18						
19						
20	PSZB-58-20			~75% gravel, ~25% fine to coarse sand, trace fines		
21						
22						
23						
24						
25	PSZB-58-25			~60% gravel, ~40% fine to coarse sand, trace fines		
26						
27						
28						
29						
30	PSZB-58-30					
31						

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PROJECT: AZUSA/IRWINDALE STUDY AREA
Azusa and Irwindale, California

Log of Boring No. PSZB-58 (cont'd)

DEPTH (feet)	SAMPLES			DESCRIPTION NAME (USCS), color, moist, % by wt., plast. density, structure, cementation, react. w/HCl, geo. inter.	PID READING (ppm)	REMARKS
	Sample No.	Sample	Blows/ 6 inches			
32				POORLY GRADED GRAVEL with SAND (GP): continued		
33				~80% gravel, ~20% fine to coarse sand, trace fines		
34						
35	PSZB-58-35					
36						
37						
38				~65% gravel, ~35% fine to coarse sand, trace fines		
39						
40	PSZB-58-40					
41				Bottom of boring at 40.5 ft bgs		Boring backfilled with bentonite chips and continuously hydrated Surface patched with asphalt
42						
43						
44						
45						
46						
47						
48						

RMRK3



Geomatrix Consultants

Project No. 7190.005 0

Page 3 of 3

PROJECT: AZUSA/IRWINDALE STUDY AREA Azusa and Irwindale, California					Log of Boring No. PSZB-59					
BORING LOCATION: PerkinElmer					ELEVATION AND DATUM: 564.59 ft msl (NAVD 88)					
DRILLING CONTRACTOR: Layne Christenson, Co.					DATE STARTED: 2/16/06		DATE FINISHED: 2/16/06			
DRILLING METHOD: Dual Wall Air Percussion					TOTAL DEPTH (ft.): 40.5		MEASURING POINT: Ground surface			
DRILLING EQUIPMENT: Foremost Drills AP-1000					DEPTH TO WATER		FIRST NA		COMPL. NA	24 HRS. NA
SAMPLING METHOD: Cuttings from cyclone or as noted in remarks					LOGGED BY: K. Zeiler					
HAMMER WEIGHT: NA			DROP: NA		RESPONSIBLE PROFESSIONAL: G. Rees				REG. NO. 6612	

DEPTH (feet)	SAMPLES			Blows/ 6 inches	DESCRIPTION	PID READING (ppm)	REMARKS
	Sample No.	Sample	Blows/ 6 inches		NAME (USCS): color, moist, % by wt., plast. density, structure, cementation, react. w/HCl, geo. inter.		
					Surface Elevation: 564.59 ft msl (NAVD 88)		
					~3" asphalt		
1	PSZB-59-1						Air knifed to 5 feet below ground surface (bgs) by BC² Environmental on 2/14/06
2							1' and 2.5' samples collected from sidewalls of boring and 5' sample with a hand auger on 2/14/06
3	PSZB-59-2.5						Drilled to 40.5' bgs with 9" casing and hammer bit
4							Lithology assessed from cuttings collected through the cyclone
5	PSZB-59-5						
6							
7					POORLY GRADED GRAVEL (GP): grayish brown (2.5Y 5/2), moist, ~100% gravel, trace fine to coarse sand, trace fines		
8	PSZB-59-7.5						Cobbles
9					POORLY GRADED SAND with GRAVEL (SP): grayish brown (2.5Y 5/2), moist, ~80% fine to coarse sand, ~20% gravel, trace fines		
10	PSZB-59-10						
11							
12							
13					~85% fine to coarse sand, ~15% gravel, trace fines		
14							

RMRK3



DEPTH (feet)	SAMPLES			DESCRIPTION NAME (USCS): color, moist, % by wt., plast. density, structure, cementation, react. w/HCl, geo. inter.	P/D READING (ppm)	REMARKS
	Sample No.	Sample	Blows/ 6 inches			
15	PSZB-59-15			POORLY GRADED SAND with GRAVEL (SP): continued		
16						
17						
18				POORLY GRADED GRAVEL with SAND (GP): grayish brown (2.5Y 5/2), moist, ~85% gravel, ~15% fine to coarse sand, trace fines		
19						
20	PSZB-59-20					Cobbles
21						
22						
23				POORLY GRADED SAND with GRAVEL (SP): light olive brown (2.5Y 5/4), moist, ~75% fine to coarse sand, ~20% gravel, ~5% fines		
24						
25	PSZB-59-25					
26						
27						
28				POORLY GRADED GRAVEL with SAND (GP): grayish brown (2.5Y 5/2), moist, ~60% gravel, ~40% fine to coarse sand, trace fines		
29						
30	PSZB-59-30					
31						

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PROJECT: AZUSA/IRWINDALE STUDY AREA
Azusa and Irwindale, California

Log of Boring No. PSZB-59 (cont'd)

DEPTH (feet)	SAMPLES			DESCRIPTION NAME (USCS): color, moist, % by wt., plast. density, structure, cementation, react. w/HCl, geo. inter.	PID READING (ppm)	REMARKS
	Sample No.	Sample	Blows/ 6 inches			
32				POORLY GRADED GRAVEL with SAND (GP): continued		
33				POORLY GRADED SAND with GRAVEL (SP): grayish brown (2.5Y 5/2), moist, ~60% fine to coarse sand, ~40% gravel, trace fines		
34						
35	PSZB-59-35					
36						
37						
38				POORLY GRADED GRAVEL with SAND (GP): grayish brown (2.5Y 5/2), moist, ~80% gravel, ~20% fine to coarse sand, trace fines		
39						
40	PSZB-59-40					
41				Bottom of boring at 40.5 ft bgs		Boring backfilled with bentonite chips and continuously hydrated Surface patched with asphalt
42						
43						
44						
45						
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47						
48						

RMRK3



Geomatrix Consultants

Project No. 7190.005.0

Page 3 of 3

PROJECT: AZUSA/IRWINDALE STUDY AREA Azusa and Irwindale, California				Log of Boring No. PSZB-60			
BORING LOCATION: PerkinElmer				ELEVATION AND DATUM: 561.34 ft msl (NAVD 88)			
DRILLING CONTRACTOR: Layne Christenson, Co.				DATE STARTED: 2/7/06		DATE FINISHED: 2/8/06	
DRILLING METHOD: Dual Wall Air Percussion				TOTAL DEPTH (ft.): 40.5		MEASURING POINT: Ground surface	
DRILLING EQUIPMENT: Foremost Drills AP-1000				DEPTH TO WATER	FIRST NA	COMPL. NA	24 HRS. NA
SAMPLING METHOD: Cuttings from cyclone or as noted in remarks				LOGGED BY: K. Zeiler			
HAMMER WEIGHT: NA		DROP: NA		RESPONSIBLE PROFESSIONAL: G. Rees			REG. NO. 6612

DEPTH (feet)	SAMPLES			DESCRIPTION	PID READING (ppm)	REMARKS
	Sample No.	Sample	Blows/ 6 inches	NAME (USCS): color, moist, % by wt., plast. density, structure, cementation, react. w/HCl, geo. inter.		
				Surface Elevation: 561.34 ft msl (NAVD 88)		
				~4" asphalt		
1	PSZB-60-1			POORLY GRADED SAND with SILT and GRAVEL (SP-SM): dark brown (10YR 4/3), moist, ~65% fine to coarse sand, ~25% gravel, ~10% fines		Hand augered to 2 feet below ground surface (bgs) 1' sample collected from sidewalls of boring
2						
3	PSZB-60-2.5					Broken boulder clast
4				~50% fine to coarse sand, ~40% gravel, ~10% fines ↓		Drilled to 40.5' bgs with 9" casing and hammer bit
5	PSZB-60-5					Lithology assessed from cuttings collected through the cyclone
6						
7						
8				POORLY GRADED GRAVEL with SAND (GP): grayish brown (2.5Y 5/2), moist, ~65% gravel, ~35% fine to coarse sand, trace fines		Driller missed 7.5'; no sample collected
9						
10	PSZB-60-10					
11						
12						
13						
14						

Geomatrix Consultants

Project No. 7190.005.0

Page 1 of 3

RMRK3

DEPTH (feet)	SAMPLES			DESCRIPTION NAME (USCS): color, moist, % by wt., plast. density, structure, cementation, react. w/HCl, geo. inter.	PID READING (ppm)	REMARKS
	Sample No.	Sample	Blows/ 6 inches			
15	PSZB-60-15			POORLY GRADED GRAVEL with SAND (GP): continued		
16						
17						
18				POORLY GRADED SAND with GRAVEL (SP): dark grayish brown (2.5Y 4/2), moist, ~65% fine to coarse sand, ~35% gravel, trace fines		
19						
20	PSZB-60-20					
21						
22						
23				POORLY GRADED GRAVEL with SAND (GP): dark grayish brown (2.5Y 4/2), moist, ~60% gravel, ~40% fine to coarse sand, trace fines		Large cobble
24						
25	PSZB-60-25					
26						
27						
28				~55% gravel, ~45% fine to coarse sand, trace fines		
29						
30	PSZB-60-30					
31						

RMRK3



DEPTH (feet)	SAMPLES			DESCRIPTION NAME (USCS): color, moist, % by wt., plast. density, structure, cementation, react. w/HCl, geo. inter.	PID READING (ppm)	REMARKS
	Sample No.	Sample	Blows/ 6 inches			
32				POORLY GRADED GRAVEL with SAND (GP): continued		
33				~65% gravel, ~35% fine to coarse sand, trace fines		
34						
35	PSZB-60-35					
36						
37						
38				POORLY GRADED SAND with GRAVEL (SP): dark grayish brown (2.5Y 4/2), moist, ~80% fine to coarse sand, ~20% gravel, trace fines		
39						
40	PSZB-60-40					
41				Bottom of boring at 40.5 ft bgs		Boring backfilled with bentonite chips and continuously hydrated Surface patched with asphalt
42						
43						
44						
45						
46						
47						
48						

RMRK3



PROJECT: AZUSA/IRWINDALE STUDY AREA Azusa and Irwindale, California				Log of Boring No. PSZB-61			
BORING LOCATION: PerkinElmer				ELEVATION AND DATUM: 562.16 ft msl (NAVD 88)			
DRILLING CONTRACTOR: Layne Christenson, Co.				DATE STARTED: 2/10/06		DATE FINISHED: 2/10/06	
DRILLING METHOD: Dual Wall Air Percussion				TOTAL DEPTH (ft.): 40.5		MEASURING POINT: Ground surface	
DRILLING EQUIPMENT: Foremost Drills AP-1000				DEPTH TO WATER	FIRST NA	COMPL. NA	24 HRS. NA
SAMPLING METHOD: Cuttings from cyclone or as noted in remarks				LOGGED BY: K. Zeiler			
HAMMER WEIGHT: NA		DROP: NA		RESPONSIBLE PROFESSIONAL: G. Rees			REG. NO. 6612

DEPTH (feet)	SAMPLES			DESCRIPTION	PID READING (ppm)	REMARKS
	Sample No.	Sample	Blows/ 6 inches	NAME (USCS): color, moist, % by wt, plast. density, structure, cementation, react. w/HCl, geo. inter.		
				Surface Elevation: 562.16 ft msl (NAVD 88)		
				~4" asphalt		
1	PSZB-61-1			POORLY GRADED GRAVEL with SAND (GP): grayish brown (2.5Y 5/2), moist, ~60% gravel, ~40% fine to coarse sand, trace fines		Air knifed to 5 feet below ground surface (bgs) by BC² Environmental on 2/9/06
2						1' and 2.5' samples collected from sidewalls on 2/9/06
3	PSZB-61-2.5					Drilled to 40.5' bgs with 9" casing and hammer bit
4						Lithology assessed from cuttings collected through the cyclone
5						
6	PSZB-61-6					
7						
8	PSZB-61-7.5					
9						
10	PSZB-61-10					
11						
12						
13				~80% gravel, ~20% fine to coarse sand, trace fines.		Difficult drilling
14						



DEPTH (feet)	SAMPLES			DESCRIPTION NAME (USCS): color, moist, % by wt., plast. density, structure, cementation, react. w/HCl, geo. inter.	PID READING (ppm)	REMARKS
	Sample No.	Sample	Blows/ 6 inches			
15	PSZB-61-15			POORLY GRADED GRAVEL with SAND (GP): continued ~65% gravel, ~35% fine to coarse sand, trace fines		Difficult drilling to 21' bgs
16						
17						
18						
19						
20	PSZB-61-20					
21						
22						
23						
24						
25	PSZB-61-25					
26						
27						
28						
29						
30	PSZB-61-30					
31						

RMRK3



DEPTH (feet)	SAMPLES			DESCRIPTION NAME (USCS): color, moist, % by wt., plast. density, structure, cementation, react. w/HCl, geo. inter.	PID READING (ppm)	REMARKS
	Sample No.	Sample	Blows/ 6 inches			
32				POORLY GRADED GRAVEL with SAND (GP): continued		
33				~55% gravel, ~45% fine to coarse sand, trace fines		Difficult drilling
34						
35	PSZB-61-35					
36						
37						
38				~75% gravel, ~25% fine to coarse sand, trace fines		
39						
40	PSZB-61-40					Large Cobble
41				Bottom of boring at 40.5 ft bgs		Boring backfilled with bentonite chips and continuously hydrated Surface patched with asphalt
42						
43						
44						
45						
46						
47						
48						

RMRK3



PROJECT: AZUSA/IRWINDALE STUDY AREA Azusa and Irwindale, California					Log of Boring No. PSZB-62				
BORING LOCATION: PerkinElmer					ELEVATION AND DATUM: 563.51 ft msl (NAVD 88)				
DRILLING CONTRACTOR: Layne Christenson, Co.					DATE STARTED: 2/9/06		DATE FINISHED: 2/10/06		
DRILLING METHOD: Dual Wall Air Percussion					TOTAL DEPTH (ft.): 40.5		MEASURING POINT: Ground surface		
DRILLING EQUIPMENT: Foremost Drills AP-1000					DEPTH TO WATER	FIRST NA	COMPL. NA	24 HRS. NA	
SAMPLING METHOD: Cuttings from cyclone or as noted in remarks					LOGGED BY: K. Zeiler				
HAMMER WEIGHT: NA			DROP: NA		RESPONSIBLE PROFESSIONAL: G. Rees			REG. NO. 6612	

DEPTH (feet)	SAMPLES			DESCRIPTION	PID READING (ppm)	REMARKS
	Sample No.	Sample	Blows/ 6 inches	NAME (USCS): color, moist, % by wt., plast. density, structure, cementation, react. w/HCl, geo. inter.		
				Surface Elevation: 563.51 ft msl (NAVD 88)		
				~3" asphalt		
1	PSZB-62-1					Air knifed to 5 feet below ground surface (bgs) by BC ² Environmental
2						1' and 2.5' samples collected from sidewalls of boring and 5' sample with a hand auger
3	PSZB-62-2.5					
4				POORLY GRADED GRAVEL with SAND (GP): dark grayish brown (2.5Y 4/2), moist, ~60% gravel, ~40% fine to coarse sand, trace fines		Air knifing stopped at 3.5' bgs due to boulder (possibly concrete slab)
5	PSZB-62-5					Drilled to 40.5' bgs with 9" casing and hammer bit
6						Lithology assessed from cuttings collected through the cyclone
7				~70% gravel, ~30% fine to coarse sand, trace fines		
8	PSZB-62-7.5					
9				~80% gravel, ~20% fine to coarse sand, trace fines		
10	PSZB-62-10					
11						
12						
13				~65% gravel, ~35% fine to coarse sand, trace fines		
14						

Geomatrix Consultants

Project No. 7190.005 0

Page 1 of 3

RMRK3

DEPTH (feet)	SAMPLES			DESCRIPTION NAME (USCS): color; moist, % by wt., plast. density, structure, cementation, react. w/HCl, geo. inter.	PID READING (ppm)	REMARKS
	Sample No.	Sample	Blows/ 6 inches			
15	PSZB-62-15			POORLY GRADED GRAVEL with SAND (GP): continued ~80% gravel, ~20% fine to coarse sand, trace fines		
16						
17						
18						
20	PSZB-62-20			~70% gravel, ~30% fine to coarse sand, trace fines		
21						
22						
23						
25	PSZB-62-25			~55% gravel, ~45% fine to coarse sand, trace fines		
26						
27						
28						
30	PSZB-62-30					
31						



PROJECT: AZUSA/IRWINDALE STUDY AREA
Azusa and Irwindale, California

Log of Boring No. PSZB-62 (cont'd)

DEPTH (feet)	SAMPLES			DESCRIPTION NAME (USCS): color, moist, % by wt., plast. density, structure, cementation, react. w/HCl, geo. inter.	PID READING (ppm)	REMARKS
	Sample No.	Sample	Blows/ 6 inches			
32				POORLY GRADED GRAVEL with SAND (GP): continued ~65% gravel, ~35% fine to coarse sand, trace fines ↓		
33						
34						
35	PSZB-62-35					
36						
37						
38						
39						
40	PSZB-62-40					
41						
42				Bottom of boring at 40.5 ft bgs		Boring backfilled with bentonite chips and continuously hydrated Surface patched with asphalt
43						
44						
45						
46						
47						
48						

RMRK3



Geomatrix Consultants

Project No. 7190.005.0

Page 3 of 3

PROJECT: AZUSA/IRWINDALE STUDY AREA Azusa and Irwindale, California					Log of Boring No. PSZB-63				
BORING LOCATION: PerkinElmer					ELEVATION AND DATUM: 564.45 ft msl (NAVD 88)				
DRILLING CONTRACTOR: Layne Christenson, Co.					DATE STARTED: 2/9/06		DATE FINISHED: 2/9/06		
DRILLING METHOD: Dual Wall Air Percussion					TOTAL DEPTH (ft.): 40.5		MEASURING POINT: Ground surface		
DRILLING EQUIPMENT: Foremost Drills AP-1000					DEPTH TO WATER	FIRST NA	COMPL. NA	24 HRS. NA	
SAMPLING METHOD: Cuttings from cyclone or as noted in remarks					LOGGED BY: K. Zeiler				
HAMMER WEIGHT: NA			DROP: NA		RESPONSIBLE PROFESSIONAL: G. Rees			REG. NO. 6612	

DEPTH (feet)	SAMPLES			DESCRIPTION NAME (USCS): color, moist, % by wt., plast. density, structure, cementation, react. w/HCl, geo. inter. Surface Elevation: 564.45 ft msl (NAVD 88)	PID READING (ppm)	REMARKS
	Sample No.	Sample	Blows/ 6 inches			
1	PSZB-63-1			~3" asphalt		Air knifed to 5 feet below ground surface (bgs) by BC ² Environmental
2						1' and 2.5' samples collected from sidewalls of boring
3	PSZB-63-2.5					Drilled to 40.5' bgs with 9" casing and hammer bit
4						Lithology assessed from cuttings collected through the cyclone
5				POORLY GRADED GRAVEL with SAND (GP): grayish brown (2.5Y 5/2), moist, ~60% gravel, ~40% fine to coarse sand, trace fines		
6	PSZB-63-6					
7				~55% gravel, ~45% fine to coarse sand, trace fines		
8	PSZB-63-7.5					
9				~75% gravel, ~25% fine to coarse sand, trace fines		
10	PSZB-63-10					
11						
12						
13				~85% gravel, ~15% fine to coarse sand, trace fines		
14						



DEPTH (feet)	SAMPLES			DESCRIPTION NAME (USCS): color, moist, % by wt., plast. density, structure, cementation, react. w/HCl, geo. inter.	PID READING (ppm)	REMARKS
	Sample No.	Sample	Blows/ 6 inches			
15	PSZB-63-15			POORLY GRADED GRAVEL with SAND (GP): continued		
16						
17						
18						
19						
20	PSZB-63-20					
21						
22						
23						
24						
25	PSZB-63-25					Granitic cobbles
26						
27						
28				~65% gravel, ~35% fine to coarse sand, trace fines		
29						
30	PSZB-63-30					
31						



DEPTH (feet)	SAMPLES			DESCRIPTION NAME (USCS): color, moist, % by wt., plast. density, structure, cementation, react. w/HCl, geo. inter.	PID READING (ppm)	REMARKS
	Sample No.	Sample	Blows/ 6 inches			
32				POORLY GRADED GRAVEL with SAND (GP): continued		
33						Difficult drilling
34						
35	PSZB-63-35					
36						
37						
38				~75% gravel, ~25% fine to coarse sand, trace fines		
39						
40	PSZB-63-40					Granitic cobbles
41				Bottom of boring at 40.5 ft bgs		Boring backfilled with bentonite chips and continuously hydrated Surface patched with asphalt
42						
43						
44						
45						
46						
47						
48						

PROJECT: AZUSA/IRWINDALE STUDY AREA Azusa and Irwindale, California				Log of Boring No. PSZB-64			
BORING LOCATION: PerkinElmer				ELEVATION AND DATUM: 566.21 ft msl (NAVD 88)			
DRILLING CONTRACTOR: Layne Christenson, Co.				DATE STARTED: 2/8/06		DATE FINISHED: 2/9/06	
DRILLING METHOD: Dual Wall Air Percussion				TOTAL DEPTH (ft.): 40.5		MEASURING POINT: Ground surface	
DRILLING EQUIPMENT: Foremost Drills AP-1000				DEPTH TO WATER	FIRST NA	COMPL. NA	24 HRS. NA
SAMPLING METHOD: Cuttings from cyclone or as noted in remarks				LOGGED BY: K. Zeiler			
HAMMER WEIGHT: NA		DROP: NA		RESPONSIBLE PROFESSIONAL: G. Rees			REG. NO. 6612

DEPTH (feet)	SAMPLES			DESCRIPTION <small>NAME (USCS): color, moist, % by wt., plast. density, structure, cementation, react. w/HCl, geo. inter.</small>	PID READING (ppm)	REMARKS
	Sample No.	Sample	Blows/ 6 inches			
				Surface Elevation: 566.21 ft msl (NAVD 88)		
				~3" asphalt		
1	PSZB-64-1					Air knifed to 5 feet below ground surface (bgs) by BC² Environmental Large cobbles in air knife cuttings
2						
3	PSZB-64-2.5					1' and 2.5' samples collected from sidewalls of boring and 5' sample with a hand auger
4						Drilled to 40.5' bgs with 9" casing and hammer bit
5	PSZB-64-5					Lithology assessed from cuttings collected through the cyclone
6						
7				POORLY GRADED GRAVEL with SAND (GP): dark grayish brown (2.5Y 4/2), moist, ~80% gravel, ~20% fine to coarse sand, trace fines		
8	PSZB-64-7.5					Small cobbles
9				~60% gravel, ~40% fine to coarse sand, trace fines		
10	PSZB-64-10					
11						
12						
13				POORLY GRADED SAND with GRAVEL (SP): grayish brown (2.5Y 5/2), moist, ~75% fine to coarse sand, ~25% gravel, trace fines		
14						



DEPTH (feet)	SAMPLES			DESCRIPTION NAME (USCS): color, moist. % by wt., plast. density, structure, cementation, react. w/HCl, geo. inter.	PID READING (ppm)	REMARKS
	Sample No.	Sample	Blows/ 6 inches			
15	PSZB-64-15			POORLY GRADED SAND with GRAVEL (SP): continued		
16						
17						
18				dark grayish brown (10YR 4/2), ~85% fine to coarse sand, ~15% gravel, trace fines		
19						
20	PSZB-64-20					
21						
22						
23				~65% fine to coarse sand, ~35% gravel, trace fines		
24						
25	PSZB-64-25					
26						
27						
28				POORLY GRADED GRAVEL with SAND (GP): dark grayish brown (10YR 4/2), moist, ~70% gravel, ~30% fine to coarse sand, trace fines		
29						
30	PSZB-64-30					
31						



DEPTH (feet)	SAMPLES			DESCRIPTION NAME (USCS): color, moist, % by wt., plast. density, structure, cementation, react. w/HCl, geo. inter.	P/D READING (ppm)	REMARKS
	Sample No.	Sample	Blows/ 6 inches			
32				POORLY GRADED GRAVEL with SAND (GP): continued		
33				~60% gravel, ~40% fine to coarse sand, trace fines		
34						
35	PSZB-64-35					
36						
37						
38				~75% gravel, ~25% fine to coarse sand, trace fines		
39						
40	PSZB-64-40					
41				Bottom of boring at 40.5 ft bgs		Boring backfilled with bentonite chips and continuously hydrated Surface patched with asphalt
42						
43						
44						
45						
46						
47						
48						

PROJECT: AZUSA/IRWINDALE STUDY AREA Azusa and Irwindale, California				Log of Boring No. PSZB-65			
BORING LOCATION: PerkinElmer				ELEVATION AND DATUM: 567.15 ft msl (NAVD 88)			
DRILLING CONTRACTOR: Layne Christenson, Co.				DATE STARTED: 2/17/06		DATE FINISHED: 2/17/06	
DRILLING METHOD: Dual Wall Air Percussion				TOTAL DEPTH (ft.): 40.5		MEASURING POINT: Ground surface	
DRILLING EQUIPMENT: Foremost Drills AP-1000				DEPTH TO WATER	FIRST NA	COMPL. NA	24 HRS. NA
SAMPLING METHOD: Cuttings from cyclone or as noted in remarks				LOGGED BY: K. Zeiler			
HAMMER WEIGHT: NA		DROP: NA		RESPONSIBLE PROFESSIONAL: G. Rees			REG. NO. 6612

DEPTH (feet)	SAMPLES			DESCRIPTION	PID READING (ppm)	REMARKS
	Sample No.	Sample	Blows/ 6 inches	NAME (USCS): color, moist, % by wt., plast. density, structure, cementation, react. w/HCl, geo. inter.		
				Surface Elevation: 567.15 ft msl (NAVD 88)		
				~3" asphalt		
1	PSZB-65-1					Air knifed to 5 feet below ground surface (bgs) by BC² Environmental on 2/14/06
2						
3	PSZB-65-2.5					1' and 2.5' samples collected from sidewalls of boring and 5' sample with a hand auger on 2/14/06
4						
5	PSZB-65-5					Drilled to 40.5' bgs with 9" casing and hammer bit
6						
7				POORLY GRADED GRAVEL with SAND (GP): grayish brown (2.5Y 5/2), moist, ~85% gravel, ~15% fine to coarse sand, trace fines		Lithology assessed from cuttings collected through the cyclone
8	PSZB-65-7.5					
9				~70% gravel, ~30% fine to coarse sand, trace fines ▼		
10	PSZB-65-10					
11						
12						
13				~80% gravel, ~20% fine to coarse sand, trace fines ▼		
14						



DEPTH (feet)	SAMPLES			DESCRIPTION NAME (USCS): color, moist, % by wt., plast. density, structure, cementation, react. w/HCl, geo. inter.	PID READING (ppm)	REMARKS
	Sample No.	Sample	Blows/ 6 inches			
15	PSZB-65-15			POORLY GRADED GRAVEL with SAND (GP): continued		
16						
17						
18				~55% gravel, ~45% fine to coarse sand, trace fines		
19						
20	PSZB-65-20					
21						
22						
23				POORLY GRADED SAND with GRAVEL (SP): grayish brown (10YR 5/2), moist, ~70% fine to coarse sand, ~30% gravel, trace fines		
24						
25	PSZB-65-25					
26						
27						
28				POORLY GRADED GRAVEL with SAND (GP): grayish brown (10YR 5/2), moist, ~55% gravel, ~45% fine to coarse sand, trace fines		
29						
30	PSZB-65-30					
31						



DEPTH (feet)	SAMPLES			DESCRIPTION NAME (USCS): color, moist, % by wt., plast. density, structure, cementation, react. w/HCl, geo. inter.	PID READING (ppm)	REMARKS
	Sample No.	Sample	Blows/ 6 inches			
32				POORLY GRADED GRAVEL with SAND (GP): continued		Difficult drilling Freshly broken granitic clasts in cuttings
33				~65% gravel, ~35% fine to coarse sand, trace fines		
34						
35	PSZB-65-35					Broken large andesitic cobble in cuttings
36						
37						
38				POORLY GRADED SAND (SP): grayish brown (10YR 5/2), moist, ~90% fine to coarse sand, ~10% gravel, trace fines		
39						
40	PSZB-65-40					Boring backfilled with bentonite chips and continuously hydrated Surface patched with asphalt
41				Bottom of boring at 40.5 ft bgs		
42						
43						
44						
45						
46						
47						
48						

RMRK3



Geomatrix Consultants

Project No. 7190.005.0

Page 3 of 3

PROJECT: AZUSA/IRWINDALE STUDY AREA Azusa and Irwindale, California				Log of Boring No. PSZB-66			
BORING LOCATION: PerkinElmer				ELEVATION AND DATUM: 569.20 ft msl (NAVD 88)			
DRILLING CONTRACTOR: Layne Christenson, Co.				DATE STARTED: 2/13/06		DATE FINISHED: 2/13/06	
DRILLING METHOD: Dual Wall Air Percussion				TOTAL DEPTH (ft.): 40.5		MEASURING POINT: Ground surface	
DRILLING EQUIPMENT: Foremost Drills AP-1000				DEPTH TO WATER	FIRST NA	COMPL. NA	24 HRS. NA
SAMPLING METHOD: Cuttings from cyclone or as noted in remarks				LOGGED BY: K. Zeiler			
HAMMER WEIGHT: NA		DROP: NA		RESPONSIBLE PROFESSIONAL: G. Rees			REG. NO. 6612

DEPTH (feet)	SAMPLES			DESCRIPTION	PID READING (ppm)	REMARKS
	Sample No.	Sample	Blows/ 6 inches	NAME (USCS): color, moist, % by wt., plast. density, structure, cementation, react. w/HCl, geo. inter.		
				Surface Elevation: 569.20 ft msl (NAVD 88)		
				~4" asphalt		
1	PSZB-66-1					Air knifed to 5 feet below ground surface (bgs) by BC² Environmental on 2/8/06
2						1' and 2.5' samples collected from sidewalls on 2/8/06
3	PSZB-66-2.5					Drilled to 40.5' bgs with 9" casing and hammer bit
4						Lithology assessed from cuttings collected through the cyclone
5				POORLY GRADED GRAVEL with SAND (GP): dark grayish brown (2.5Y 4/2), moist, ~55% gravel, ~45% fine to coarse sand, trace fines		
6	PSZB-66-6					
7				POORLY GRADED GRAVEL (GP): grayish brown (2.5Y 5/2), moist, ~100% fine to coarse gravel, trace fine sand, trace fines		Difficult drilling
8	PSZB-66-7.5					
9				POORLY GRADED GRAVEL with SAND (GP): grayish brown (2.5Y 5/2), moist, ~60% gravel, ~40% fine to coarse sand, trace fines		
10	PSZB-66-10					
11						
12						
13				POORLY GRADED SAND with GRAVEL (SP): grayish brown (2.5Y 5/2), moist, ~60% fine to coarse sand, ~40% gravel, trace fines		
14						



DEPTH (feet)	SAMPLES			DESCRIPTION NAME (USCS): color, moist, % by wt., plast. density, structure, cementation, react. w/HCl, geo. inter.	PID READING (ppm)	REMARKS
	Sample No.	Sample	Blows/ 6 inches			
15	PSZB-66-15			POORLY GRADED SAND with GRAVEL (SP): continued ~55% fine to coarse sand, ~45% gravel, trace fines		
16						
17						
18						
19						Difficult drilling
20	PSZB-66-20					
21						Fuel pump on hammer broke down and replaced
22						
23				POORLY GRADED GRAVEL with SAND (GP): grayish brown (2.5Y 5/2), moist, ~65% gravel, ~35% fine to coarse sand, trace fines		
24						
25	PSZB-66-25					
26						
27						
28				POORLY GRADED SAND with GRAVEL (SP): grayish brown (2.5Y 5/2), moist, ~70% fine to coarse sand, ~30% gravel, trace fines		
29						
30	PSZB-66-30					
31						



PROJECT: AZUSA/IRWINDALE STUDY AREA
Azusa and Irwindale, California

Log of Boring No. PSZB-66 (cont'd)

DEPTH (feet)	SAMPLES			DESCRIPTION NAME (USCS): color, moist, % by wt., plast. density, structure, cementation, react. w/HCl, geo. inter.	PID READING (ppm)	REMARKS
	Sample No.	Sample	Blows/ 6 inches			
32				POORLY GRADED SAND with GRAVEL (SP): continued		
33				POORLY GRADED GRAVEL with SAND (GP): grayish brown (2.5Y 5/2), moist, ~75% gravel, ~25% fine to coarse sand, trace fines		
34						
35	PSZB-66-35					
36						
37						
38				POORLY GRADED GRAVEL (GP): grayish brown (2.5Y 5/2), moist, ~95% gravel, ~5% fine to coarse sand, trace fines		
39						
40	PSZB-66-40					Cobbles
41				Bottom of boring at 40.5 ft bgs		Boring backfilled with bentonite chips and continuously hydrated Surface patched with asphalt
42						
43						
44						
45						
46						
47						
48						

RMRK3



Geomatrix Consultants

Project No 7190.005.0

Page 3 of 3

PROJECT: AZUSA/IRWINDALE STUDY AREA Azusa and Irwindale, California				Log of Boring No. PSZB-67			
BORING LOCATION: PerkinElmer				ELEVATION AND DATUM: 570.00 ft msl (NAVD 88)			
DRILLING CONTRACTOR: Layne Christenson, Co.				DATE STARTED: 2/13/06		DATE FINISHED: 2/13/06	
DRILLING METHOD: Dual Wall Air Percussion				TOTAL DEPTH (ft.): 40.5		MEASURING POINT: Ground surface	
DRILLING EQUIPMENT: Foremost Drills AP-1000				DEPTH TO WATER	FIRST NA	COMPL. NA	24 HRS. NA
SAMPLING METHOD: Cuttings from cyclone or as noted in remarks				LOGGED BY: K. Zeiler			
HAMMER WEIGHT: NA		DROP: NA		RESPONSIBLE PROFESSIONAL: G. Rees			REG. NO. 6612

DEPTH (feet)	SAMPLES			DESCRIPTION	PID READING (ppm)	REMARKS
	Sample No.	Sample	Blows/ 6 inches	NAME (USCS): color, moist, % by wt., plast. density, structure, cementation, react. w/HCl, geo. inter.		
				Surface Elevation: 570.00 ft msl (NAVD 88)		
				~3" asphalt		
1	PSZB-67-1					Air knifed to 5 feet below ground surface (bgs) by BC² Environmental on 2/8/06
2						1' and 2.5' samples collected from sidewalls of boring and 5.5' sample with a hand auger on 2/8/06
3	PSZB-67-2.5					Drilled to 40.5' bgs with 9" casing and hammer bit
4						Lithology assessed from cuttings collected through the cyclone
5						
6	PSZB-67-5.5					
7				POORLY GRADED SAND with GRAVEL (SP): brown (10YR 5/3), moist, ~60% fine to coarse sand, ~40% gravel, trace fines		
8	PSZB-67-7.5					
9				~55% fine to coarse sand, ~45% gravel, trace fines		
10	PSZB-67-10					
11						
12						Difficult drilling
13				POORLY GRADED GRAVEL with SAND (GP): grayish brown (10YR 5/2), moist, ~70% gravel, ~30% fine to coarse sand, trace fines		
14						



DEPTH (feet)	SAMPLES			DESCRIPTION NAME (USCS): color, moist, % by wt., plast. density, structure, cementation, react. w/HCl, geo. inter.	PID READING (ppm)	REMARKS
	Sample No.	Sample	Blows/ 6 inches			
15	PSZB-67-15			POORLY GRADED GRAVEL with SAND (GP): continued		
16						
17						
18				brown (10YR 5/3), ~55% gravel, ~45% fine to coarse sand, trace fines		
19						
20	PSZB-67-20					
21						
22						Difficult drilling
23				~80% gravel, ~20% fine to coarse sand, trace fines		
24						
25	PSZB-67-25					Cobbles
26						
27						
28				~55% gravel, ~45% fine to coarse sand, trace fines		
29						
30	PSZB-67-30					
31						



PROJECT: AZUSA/IRWINDALE STUDY AREA
Azusa and Irwindale, California

Log of Boring No. PSZB-67 (cont'd)

DEPTH (feet)	SAMPLES			DESCRIPTION NAME (USCS): color, moist, % by wt., plast. density, structure, cementation, react. w/HCl, geo. inter.	PID READING (ppm)	REMARKS
	Sample No.	Sample	Blows/ 6 inches			
32				POORLY GRADED GRAVEL with SAND (GP): continued		
33						
34						
35	PSZB 67- 35					
36						
37						
38				grayish brown (2.5Y 5/2), ~80% gravel, ~20% fine to coarse sand, trace fines		
39						
40	PSZB 67- 40					Cobbles
41				Bottom of boring at 40.5 ft bgs		Boring backfilled with bentonite chips and continuously hydrated Surface patched with asphalt
42						
43						
44						
45						
46						
47						
48						

RMRK3



Geomatrix Consultants

Project No. 7190.005.0

Page 3 of 3

PROJECT: AZUSA/IRWINDALE STUDY AREA Azusa and Irwindale, California					Log of Boring No. PSZB-68				
BORING LOCATION: PerkinElmer					ELEVATION AND DATUM: 569.15 ft msl (NAVD 88)				
DRILLING CONTRACTOR: Layne Christenson, Co.					DATE STARTED: 3/6/06		DATE FINISHED: 3/6/06		
DRILLING METHOD: Dual Wall Air Percussion					TOTAL DEPTH (ft): 40.5		MEASURING POINT Ground surface		
DRILLING EQUIPMENT: Foremost Drills AP-1000					DEPTH TO WATER	FIRST NA	COMPL. NA	24 HRS NA	
SAMPLING METHOD: Cuttings from cyclone or as noted in remarks					LOGGED BY: P. Jeffers				
HAMMER WEIGHT: NA			DROP: NA		RESPONSIBLE PROFESSIONAL: G. Rees			REG. NO. 6612	

DEPTH (feet)	SAMPLES			DESCRIPTION NAME (USCS): color, moist, % by wt., plast density, structure, cementation, react w/HCl, geo. inter	PID READING (ppm)	REMARKS
	Sample No.	Sample Blows/ 6 inches				
				Surface Elevation: 569.15 ft msl (NAVD 88)		
				~3" asphalt		
1	PSZB-68-1					Air knifed to 5 feet below ground surface (bgs) by BC² Environmental on 2/22/06
2						1' and 2.5' samples collected from sidewalls of boring and 5' sample with a hand auger on 2/22/06
3	PSZB-68-2.5					Drilled to 40.5' bgs with 9" casing and hammer bit
4						
5	PSZB-68-5					Lithology assessed from cuttings collected through the cyclone
6						
7				POORLY GRADED GRAVEL with SAND (GP): very pale brown (10YR 7/3), moist, ~85% gravel, ~15% fine to coarse sand		
8	PSZB-68-7.5					
9						
10	PSZB-68-10					
11						
12						
13				POORLY GRADED SAND with GRAVEL (SP): brown (7.5YR 7/4), moist, ~85% fine to coarse sand, ~15% gravel		
14						

RMRK3



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Project No. 7190.005 0

Page 1 of 3

DEPTH (feet)	SAMPLES			DESCRIPTION NAME (USCS): color, moist, % by wt., plast. density, structure, cementation, react. w/HCl, geo. inter.	PID READING (ppm)	REMARKS
	Sample No.	Sample	Blows/ 6 inches			
15	PSZB-68-15			POORLY GRADED SAND with GRAVEL (SP): continued ~75% fine to coarse sand, ~25% gravel		
16						
17						
18						
19						
20	PSZB-68-20			~80% fine to coarse sand, ~20% gravel		
21						
22						
23						
24						
25	PSZB-68-25			~85% fine to coarse sand, ~15% gravel		
26						
27						
28						
29						
30	PSZB-68-30					
31						



PROJECT: AZUSA/IRWINDALE STUDY AREA
Azusa and Irwindale, California

Log of Boring No. PSZB-68 (cont'd)

DEPTH (feet)	SAMPLES			DESCRIPTION NAME (USCS): color, moist, % by wt., plast. density, structure, cementation, react. w/HCl, geo. inter.	PID READING (ppm)	REMARKS
	Sample No.	Sample	Blows/ 6 inches			
32				POORLY GRADED SAND with GRAVEL (SP): continued		
33						
34						
35	PSZB-68-35					
36						
37						
38						
39						
40	PSZB-68-40					
41				Bottom of boring at 40.5 ft bgs		Boring backfilled with bentonite chips and continuously hydrated Surface patched with asphalt
42						
43						
44						
45						
46						
47						
48						

RMRK3



Geomatrix Consultants

Project No. 7190.005.0

Page 3 of 3

PROJECT: AZUSA/IRWINDALE STUDY AREA Azusa and Irwindale, California					Log of Boring No. PSZB-69					
BORING LOCATION: PerkinElmer					ELEVATION AND DATUM: 568.38 ft msl (NAVD 88)					
DRILLING CONTRACTOR: Layne Christenson, Co.					DATE STARTED: 3/6/06		DATE FINISHED: 3/6/06			
DRILLING METHOD: Dual Wall Air Percussion					TOTAL DEPTH (ft.): 40.5		MEASURING POINT: Ground surface			
DRILLING EQUIPMENT: Foremost Drills AP-1000					DEPTH TO WATER		FIRST NA		COMPL. NA	
SAMPLING METHOD: Cuttings from cyclone or as noted in remarks					LOGGED BY: P. Jeffers		24 HRS. NA			
HAMMER WEIGHT: NA			DROP: NA			RESPONSIBLE PROFESSIONAL: G. Rees			REG. NO. 6612	

DEPTH (feet)	SAMPLES			Blows/ 6 inches	DESCRIPTION	PID READING (ppm)	REMARKS
	Sample No.	Sample			NAME (USCS): color, moist, % by wt., plast. density, structure, cementation, react. w/HCl, geo. inter.		
					Surface Elevation: 568.38 ft msl (NAVD 88)		
					~3" asphalt		
1	PSZB-69-1						Air knifed to 5 feet below ground surface (bgs) by BC² Environmental on 2/22/06
2							
3	PSZB-69-2.5						1' and 2.5' samples collected from sidewalls of boring and 5' sample with a hand auger on 2/22/06
4							
5	PSZB-69-5						Drilled to 40.5' bgs with 9" casing and hammer bit
6							
7					POORLY GRADED GRAVEL with SAND (GP): light gray (Gley 1 7/N), dry, ~85% gravel, ~15% fine to coarse sand, trace fines		Lithology assessed from cuttings collected through the cyclone
8	PSZB-69-7.5						
9					moist, ~80% gravel, ~20% fine to coarse sand		
10	PSZB-69-10						
11							
12							
13					~85% gravel, ~15% fine to coarse sand		
14							



DEPTH (feet)	SAMPLES			DESCRIPTION NAME (USCS): color, moist, % by wt., plast. density, structure, cementation, react. w/HCl, geo. inter.	PID READING (ppm)	REMARKS
	Sample No.	Sample	Blows/ 6 inches			
15	PSZB-69-15			POORLY GRADED GRAVEL with SAND (GP): continued		
16						
17						
18						
19						
20	PSZB-69-20					
21						
22						
23						
24						
25	PSZB-69-25			~75% gravel, ~25% fine to coarse sand		
26						
27						
28						
29						
30	PSZB-69-30					
31						



PROJECT: AZUSA/IRWINDALE STUDY AREA
Azusa and Irwindale, California

Log of Boring No. PSZB-69 (cont'd)

DEPTH (feet)	SAMPLES			DESCRIPTION NAME (USCS): color, moist, % by wt., plast. density, structure, cementation, react. w/HCl, geo. inter.	PID READING (ppm)	REMARKS
	Sample No.	Sample	Blows/ 6 inches			
32				POORLY GRADED GRAVEL with SAND (GP): continued ~80% gravel, ~20% fine to coarse sand ▼		
33						
34						
35	PSZB-69-35					
36						
37						
38						
39						
40	PSZB-69-40					
41						
42				Bottom of boring at 40.5 ft bgs		Boring backfilled with bentonite chips and continuously hydrated Surface patched with asphalt
43						
44						
45						
46						
47						
48						

RMRK3



Geomatrix Consultants

Project No. 7190.005.0

Page 3 of 3

PROJECT: AZUSA/IRWINDALE STUDY AREA Azusa and Irwindale, California				Log of Boring No. PSZB-70			
BORING LOCATION: PerkinElmer				ELEVATION AND DATUM: 568.09 ft msl (NAVD 88)			
DRILLING CONTRACTOR: Layne Christenson, Co.				DATE STARTED: 3/3/06		DATE FINISHED: 3/3/06	
DRILLING METHOD: Dual Wall Air Percussion				TOTAL DEPTH (ft.): 40.5		MEASURING POINT: Ground surface	
DRILLING EQUIPMENT: Foremost Drills AP-1000				DEPTH TO WATER	FIRST NA	COMPL. NA	24 HRS. NA
SAMPLING METHOD: Cuttings from cyclone				LOGGED BY: A. Gonzalez			
HAMMER WEIGHT: NA		DROP: NA		RESPONSIBLE PROFESSIONAL: G. Rees			REG. NO. 6612

DEPTH (feet)	SAMPLES			DESCRIPTION	PID READING (ppm)	REMARKS
	Sample No.	Sample	Blows/ 6 inches	NAME (USCS): color, moist, % by wt., plast. density, structure, cementation, react w/HCl, geo. inter.		
				Surface Elevation: 568.09 ft msl (NAVD 88)		
1	PSZB-70-1			~3" asphalt POORLY GRADED GRAVEL with SAND (GP): light olive brown (2.5Y 5/3), moist, ~60% fine to coarse gravel, ~40% fine to coarse sand		Drilled to 40.5' bgs with 9" casing and hammer bit Lithology assessed from cuttings collected through the cyclone
2				grayish brown (2.5Y 5/2), ~80% fine to coarse gravel, ~20% fine to coarse sand		
3	PSZB-70-2.5					
4				~85% fine to coarse gravel, ~15% fine to coarse sand		
5	PSZB-70-5					
6				light olive brown (2.5Y 5/3)		
7						
8	PSZB-70-7.5					
9				grayish brown (2.5Y 5/2)		
10	PSZB-70-10					
11						
12						
13				dark grayish brown (2.5Y 4/2)		
14						

Geomatrix Consultants

Project No. 7190.005.0

Page 1 of 3

RMRK3

DEPTH (feet)	SAMPLES			DESCRIPTION NAME (USCS): color, moist, % by wt., plast. density, structure, cementation, react. w/HCl, geo. inter.	PID READING (ppm)	REMARKS
	Sample No.	Sample Blows/ 6 inches				
15	PSZB-70-15			POORLY GRADED GRAVEL with SAND (GP): continued		
16						
17						
18				light olive brown (2.5Y 5/3)		
19						
20	PSZB-70-20					
21						
22						
23				light yellowish brown (2.5Y 6/3), ~80% fine to coarse gravel, ~20% fine to coarse sand		
24						
25	PSZB-70-25					
26						
27						
28				light gray (2.5 7/1), ~85% fine to coarse gravel, ~15% fine to coarse sand		
29						
30	PSZB-70-30					
31						



PROJECT: AZUSA/IRWINDALE STUDY AREA
Azusa and Irwindale, California

Log of Boring No. PSZB-70 (cont'd)

DEPTH (feet)	SAMPLES			DESCRIPTION NAME (USCS): color, moist, % by wt., plast. density, structure, cementation, react. w/HCl, geo. inter.	PID READING (ppm)	REMARKS
	Sample No.	Sample	Blows/ 6 inches			
32				POORLY GRADED GRAVEL with SAND (GP): continued		
33				POORLY GRADED SAND with GRAVEL (SP): light olive brown (2.5Y 5/3), moist, ~70% fine to coarse sand, ~30% gravel, trace fines		
34						
35	PSZB-70-35					
36						
37						
38				light yellowish brown (2.5Y 6/3) ↓		
39						
40	PSZB-70-40					
41				Bottom of boring at 40.5 ft bgs		Boring backfilled with bentonite chips and continuously hydrated Surface patched with asphalt
42						
43						
44						
45						
46						
47						
48						

RMRK3



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Project No. 7190.005.0

Page 3 of 3

PROJECT: AZUSA/IRWINDALE STUDY AREA Azusa and Irwindale, California					Log of Boring No. PSZB-71				
BORING LOCATION: Northrop Grumman					ELEVATION AND DATUM: 560.66 ft msl (NAVD 88)				
DRILLING CONTRACTOR: BC ² Environmental					DATE STARTED 3/6/06		DATE FINISHED 3/6/06		
DRILLING METHOD: Air Knife					TOTAL DEPTH (ft.): 5.5		MEASURING POINT: Ground surface		
DRILLING EQUIPMENT: NA					DEPTH TO WATER	FIRST NA	COMPL. NA	24 HRS NA	
SAMPLING METHOD: Hand auger and grab samples					LOGGED BY: P. Jeffers				
HAMMER WEIGHT: NA			DROP: NA		RESPONSIBLE PROFESSIONAL: G. Rees			REG. NO 6612	

DEPTH (feet)	SAMPLES			DESCRIPTION NAME (USCS): color, moist, % by wt., plast density, structure, cementation, react w/HCl, geo. inter.	PID READING (ppm)	REMARKS
	Sample No.	Sample	Blows/ 6 inches			
				Surface Elevation. 560.66 ft msl (NAVD 88)		
				~3" asphalt		
1	PSZB-71-1			POORLY GRADED GRAVEL with SAND (GP): brown (7.5YR 5/4), moist, ~85% gravel, ~15% fine to coarse sand		1' and 2.5' samples collected from sidewalls of boring and 5' sample with a hand auger
2						
3	PSZB-71-2.5					
4						
5	PSZB-71-5					Boring backfilled with native material Surface patched with asphalt
6				Bottom of boring at 5.5 ft bgs		
7						
8						
9						
10						
11						
12						
13						
14						

RMRK3



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Project No 7190 005.0

Page 1 of 1

PROJECT: AZUSA/IRWINDALE STUDY AREA Azusa and Irwindale, California					Log of Boring No. PSZB-72				
BORING LOCATION: Northrop Grumman					ELEVATION AND DATUM: 561.94 ft msl (NAVD 88)				
DRILLING CONTRACTOR: Layne Christenson, Co.					DATE STARTED 3/7/06		DATE FINISHED 3/7/06		
DRILLING METHOD: Dual Wall Air Percussion					TOTAL DEPTH (ft.) 40.5		MEASURING POINT Ground surface		
DRILLING EQUIPMENT: Foremost Drills AP-1000					DEPTH TO WATER	FIRST NA	COMPL NA	24 HRS NA	
SAMPLING METHOD: Cuttings from cyclone					LOGGED BY: P. Jeffers				
HAMMER WEIGHT NA			DROP: NA		RESPONSIBLE PROFESSIONAL: G. Rees			REG NO. 6612	

DEPTH (feet)	SAMPLES			DESCRIPTION NAME (USCS): color, moist, % by wt., plast. density, structure, cementation, react w/HCl, geo inter.	PID READING (ppm)	REMARKS
	Sample No.	Sample	Blows/ 6 inches			
				Surface Elevation: 561.94 ft msl (NAVD 88)		
				~3" asphalt		Air knifed to 5 feet below ground surface (bgs) by BC ² Environmental on 3/6/06
1	PSZB-72-1					1' and 2.5' samples collected from sidewalls of boring and 5' sample with a hand auger on 3/6/06
2						
3	PSZB-72-2.5					Drilled to 40.5' bgs with 9" casing and hammer bit
4						
5	PSZB-72-5					Lithology assessed from cuttings collected through the cyclone
6				POORLY GRADED GRAVEL with SAND (GP): brown (7.5YR 5/4), moist, ~85% gravel, ~15% fine to coarse sand		
7						
8	PSZB-72-7.5					
9				~80% gravel, ~20% fine to coarse sand		
10	PSZB-72-10					
11						
12						
13				POORLY GRADED SAND with GRAVEL (SP): brown (7.5YR 5/4), moist, ~75% fine to coarse sand, ~25% gravel		
14						



DEPTH (feet)	SAMPLES			DESCRIPTION NAME (USCS): color, moist, % by wt., plast. density, structure, cementation, react. w/HCl, geo. inter.	PID READING (ppm)	REMARKS
	Sample No.	Sample Blows/ 6 inches				
15	PSZB-72-15			POORLY GRADED SAND with GRAVEL (SP): continued		
16						
17						
18				POORLY GRADED GRAVEL with SAND (GP): light gray (Gley 7/N), moist, ~75% gravel, ~25% fine to coarse sand		
19						
20	PSZB-72-20					
21						
22						
23				POORLY GRADED SAND with GRAVEL (SP): brown (7.5YR 5/4), moist, ~85% fine to coarse sand, ~15% gravel		
24						
25	PSZB-72-25					
26						
27						
28				~80% fine to coarse sand, ~20% gravel ↓		
29						
30	PSZB-72-30					
31						

RMRK3



PROJECT: AZUSA/IRWINDALE STUDY AREA
Azusa and Irwindale, California

Log of Boring No. PSZB-72 (cont'd)

DEPTH (feet)	SAMPLES			DESCRIPTION NAME (USCS): color, moist, % by wt., plast. density, structure, cementation, react. w/HCl, geo. inter	PID READING (ppm)	REMARKS
	Sample No.	Sample	Blows/ 6 inches			
32				POORLY GRADED SAND with GRAVEL (SP): continued		
33				~70% fine to coarse sand, ~30% gravel		
34						
35	PSZB-72-35					
36						
37						
38				~80% fine to coarse sand, ~20% gravel		
39						
40	PSZB-72-40					
41				Bottom of boring at 40.5 ft bgs		Boring backfilled with bentonite chips and continuously hydrated Surface patched with asphalt
42						
43						
44						
45						
46						
47						
48						

RMK3



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Project No. 7190 005.0

Page 3 of 3

PROJECT: AZUSA/IRWINDALE STUDY AREA Azusa and Irwindale, California					Log of Boring No. PSZB-73				
BORING LOCATION: Northrop Grumman					ELEVATION AND DATUM: 563.12 ft msl (NAVD 88)				
DRILLING CONTRACTOR: BC ² Environmental					DATE STARTED: 3/6/06		DATE FINISHED: 3/6/06		
DRILLING METHOD: Air Knife					TOTAL DEPTH (ft.): 5.5		MEASURING POINT: Ground surface		
DRILLING EQUIPMENT NA					DEPTH TO WATER	FIRST NA	COMPL. NA	24 HRS. NA	
SAMPLING METHOD: Hand auger and grab samples					LOGGED BY P. Jeffers				
HAMMER WEIGHT. NA			DROP NA		RESPONSIBLE PROFESSIONAL. G. Rees			REG. NO. 6612	

DEPTH (feet)	SAMPLES			DESCRIPTION NAME (USCS): color, moist, % by wt, plast density, structure, cementation, react w/HCl, geo. inter.	PID READING (ppm)	REMARKS
	Sample No.	Sample Blows/ 6 inches				
				Surface Elevation. 563.12 ft msl (NAVD 88)		
				~3" asphalt		
1	PSZB-73-1			POORLY GRADED GRAVEL with SAND (GP). brown (7.5YR 5/4), moist, ~85% gravel, ~15% fine to coarse sand		1' and 2.5' samples collected from sidewalls of boring and 5' sample with a hand auger
2						
3	PSZB-73-2.5					
4						
5	PSZB-73-5					Boring backfilled with native material Surface patched with asphalt
6				Bottom of boring at 5.5 ft bgs		
7						
8						
9						
10						
11						
12						
13						
14						

RMRK3



APPENDIX B

SURVEY DATA

SITE PLAN

BORE HOLE & VAPOR WELL LOCATIONS

AEROJET - 1300 W OPTICAL DRIVE, AZUSA, CA 91702

DATE OF SURVEY: APRIL 20, 2005

BORE HOLES					
WELL	NORTH	EAST	LATITUDE (DD)	LONGITUDE (DD)	FS (ELEVATION)
PSZB-5	1869143.29	6583161.51	34 1284723	-117.9289747	568.66
PSZB-6	1869128.48	6583132.51	34 1284317	-117.9290705	568.46
PSZB-10	1868871.76	6583178.47	34 1277261	-117.9289192	565.01
PSZB-11	1868909.41	6583523.23	34 1278289	-117.9277800	567.48
PSZB-12	1868760.46	6583357.62	34 1274199	-117.9283275	566.67
PSZB-21	1869130.59	6583087.89	34 1284375	-117.9292179	569.08
PSZB-22	1869159.14	6583115.19	34 1285159	-117.9291276	569.40
PSZB-23	1869130.11	6583197.25	34 1284360	-117.9288566	568.45
PSZB-24	1869092.39	6583195.92	34 1283324	-117.9288610	567.06
PSZB-25	1868834.97	6583251.53	34 1276249	-117.9286779	564.22
PSZB-26	1868808.91	6583267.03	34 1275532	-117.9286268	564.34
PSZB-27	1868807.49	6583219.15	34 1275495	-117.9287850	562.91
PSZB-27A	1868800.04	6583222.50	34 1275290	-117.9287739	562.89
PSZB-28	1868786.19	6583292.11	34 1274908	-117.9285439	564.52
PSZB-29	1868747.96	6583293.95	34 1273857	-117.9285380	564.26
PSZB-30	1868732.88	6583359.38	34 1273441	-117.9283218	566.30
PSZB-31	1868774.03	6583393.26	34 1274572	-117.9282097	566.92
PSZB-32	1868917.12	6583475.97	34 1278502	-117.9279361	567.11
PSZB-33	1868930.47	6583519.16	34 1278868	-117.9277934	567.50
PSZB-34	1868916.30	6583557.65	34 1278478	-117.9276662	567.91
PSZB-35	1868873.66	6583559.04	34 1277306	-117.9276617	567.34
PSZB-36	1869168.92	6583196.02	34 1285427	-117.9288605	569.80
PSZB-37	1869105.32	6583219.65	34 1283678	-117.9287826	567.98
PSZB-38	1869051.78	6583195.01	34 1282208	-117.9288642	565.86
PSZB-39	1868901.87	6583194.22	34 1278088	-117.9288671	564.60
PSZB-40	1868855.82	6583203.89	34 1276823	-117.9283353	564.24
PSZB-41	1868758.56	6583222.71	34 1274150	-117.9287733	562.31
PSZB-42	1868711.52	6583268.08	34 1272857	-117.9286235	563.48
PSZB-43	1868695.11	6583332.24	34 1272404	-117.9284116	565.22
PSZB-44	1868721.98	6583418.68	34 1273141	-117.9281259	565.93
PSZB-46	1868929.11	6583426.78	34 1278832	-117.9280986	567.08
PSZB-47	1868902.67	6583399.74	34 1278106	-117.9281880	566.50
PSZB-49	1868767.34	6583447.98	34 1274387	-117.9280289	566.42

VAPOR WELLS					
WELL	NORTH	EAST	LATITUDE (DD)	LONGITUDE (DD)	FS (ELEVATION)
SVMW-34	1868877.83	6583169.86	34 1277428	-117.9289477	565.64
SZB-14	1868891.78	6583532.08	34 1277805	-117.9277508	567.08

DATE OF SURVEY: FEBRUARY 21, 2006

BORE HOLES					
WELL	NORTH	EAST	LATITUDE (DD)	LONGITUDE (DD)	FS (ELEVATION)
PIZB-1	1869132.34	6583197.47	34 1284421	-117.9288558	568.47
PIZB-2	1869090.16	6583196.19	34 1283262	-117.9288602	567.08
PIZB-3	1868744.27	6583286.68	34 1273756	-117.9285620	564.35
PIZB-4	1868770.50	6583394.18	34 1274475	-117.9282067	566.62
PIZB-6	1868922.41	6583419.07	34 1278648	-117.9281241	566.50
PSZB-45	1868875.59	6583532.58	34 1271864	-117.9277496	566.11
PSZB-50	1869217.33	6583145.13	34 1286758	-117.9290286	570.89
PSZB-51	1869215.78	6583233.38	34 1286713	-117.9287370	571.17
PSZB-51A	1869215.66	6583239.86	34 1286710	-117.9287156	571.21
PSZB-52	1869172.29	6583300.38	34 1285517	-117.9285157	569.66
PSZB-55	1868993.29	6583255.73	34 1280599	-117.9286637	565.77
PSZB-56	1869009.12	6583194.83	34 1281035	-117.9288649	565.17
PSZB-57	1868999.28	6583267.77	34 1278016	-117.9286241	565.04
PSZB-58	1868914.81	6583251.09	34 1278443	-117.9286792	564.75
PSZB-59	1868813.13	6583299.32	34 1275648	-117.9285200	564.59
PSZB-60	1868699.02	6583185.82	34 1272515	-117.9288954	561.34
PSZB-61	1868616.49	6583247.75	34 1270246	-117.9286909	562.16
PSZB-62	1868615.00	6583364.16	34 1270202	-117.9283063	563.51
PSZB-63	1868614.65	6583470.19	34 1270191	-117.9279559	564.45
PSZB-64	1868730.47	6583567.88	34 1273371	-117.9276329	566.21
PSZB-65	1868790.97	6583575.48	34 1275034	-117.9276076	567.15
PSZB-66	1868886.84	6583602.71	34 1277667	-117.9275174	569.20
PSZB-67	1868948.44	6583604.50	34 1279360	-117.9275113	570.00
PSZB-69	1868969.77	6583442.74	34 1279949	-117.9280458	568.38
PSZB-70	1868967.09	6583344.32	34 1279878	-117.9283710	568.09

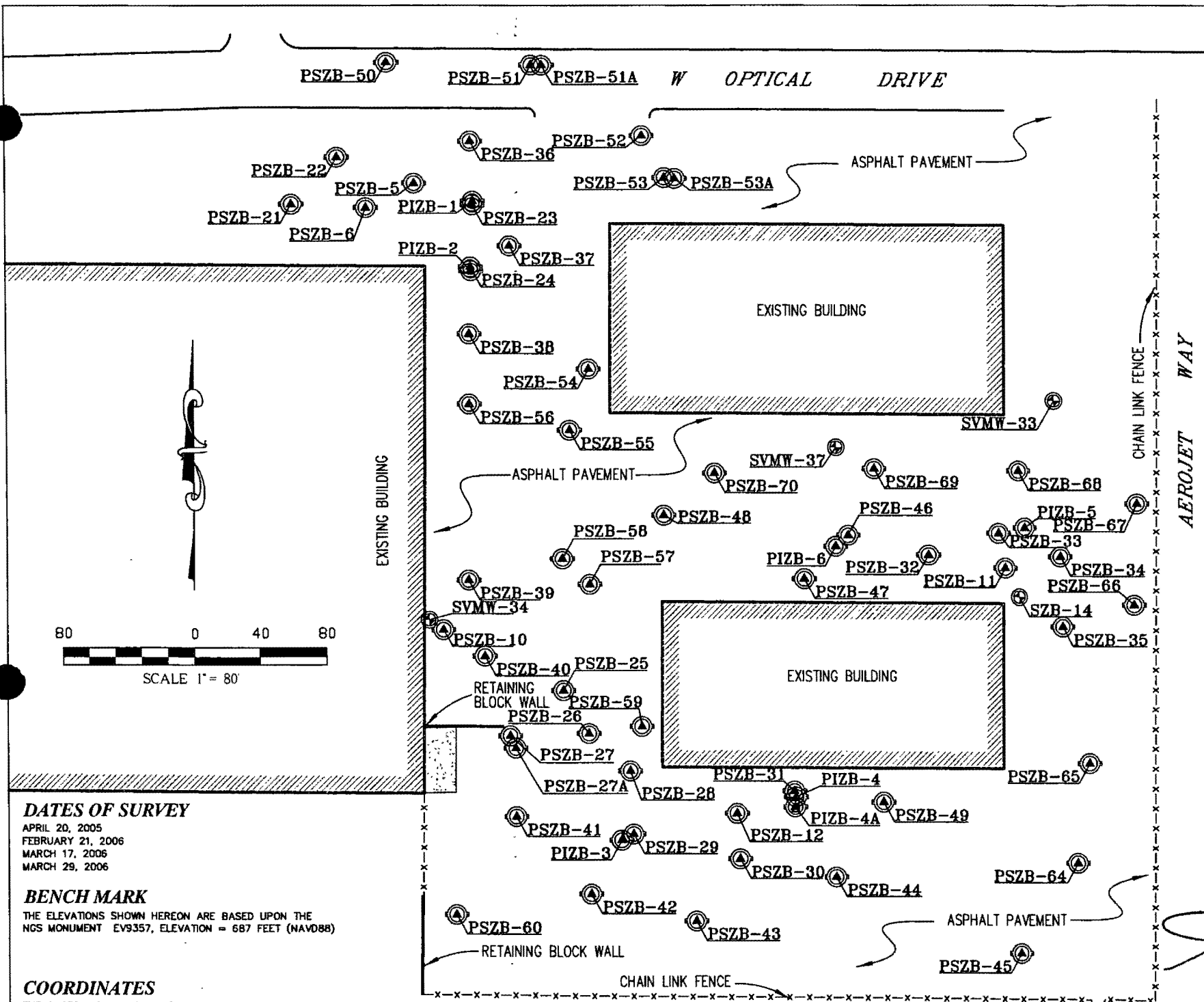
PREPARED FOR
GEOMATRIX CONSULTANT, INC.

250 E. RINCON STREET, SUITE 240
CORONA, CA 92829
PHONE (951) 273-7400
FAX (951) 273-7420

NO.	DATE	REVISIONS	BY	CALVADA
	04-25-05	SUBMITTAL	MN	
1	02-22-06	ADD BORE HOLES	MN	
2	03-20-06	ADD BORE HOLES & WELLS	MN	
3	03-24-06	CLIENT'S COMMENTS	MN	
4	03-31-06	ADD BORE HOLES	MN	

LAND SURVEYING • CIVIL ENGINEERING • ENVIRONMENTAL SERVICES
108 BUSINESS CENTER DRIVE, CORONA, CA 92880
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www.calvada.com JOB NO. 05191

SHEET 1 OF 1



DATES OF SURVEY

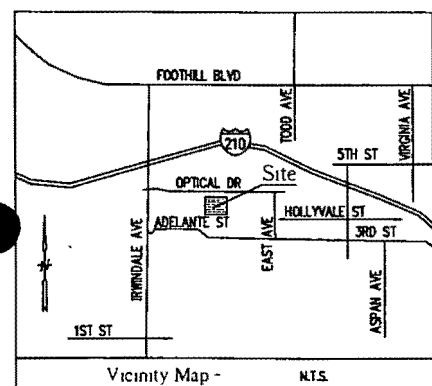
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FEBRUARY 21, 2006
MARCH 17, 2006
MARCH 29, 2006

BENCH MARK

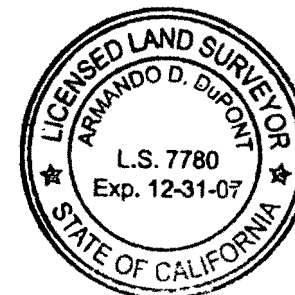
THE ELEVATIONS SHOWN HEREON ARE BASED UPON THE
NGS MONUMENT EV9357, ELEVATION = 687 FEET (NAVD88)

COORDINATES

THE COORDINATES SHOWN HEREON ARE BASED UPON THE
STATE PLANE COORDINATE SYSTEM OF 1983 (NAD83),
CALIFORNIA ZONE V.



Legend		
●	BORE HOLE	FS FINISH SURFACE
—	CHAIN LINK FENCE	TOC TOP OF CASING
■	CONCRETE	TOR TOP OF RIM
○		○ VAPOR WELL



DATE OF SURVEY: MARCH 17, 2006

BORE HOLES					
WELL	NORTH	EAST	LATITUDE (DD)	LONGITUDE (DD)	FS (ELEVATION)
PIZB-5	1868933.87	6583535.55	34 1278961	-117.9277392	567.78
PSZB-48	1868941.27	6583313.11	34 1279169	-117.9284742	566.59
PSZB-54	1869030.56	6583267.44	34 1281623	-117.9286249	566.99
PSZB-68	1868968.64	6583531.55	34 1279916	-117.9277523	569.15
PIZB-71	1868552.10	6583246.25	34 1268476	-117.9286960	560.66
PIZB-72	1868552.96	6583362.99	34 1268498	-117.9283103	561.94
PIZB-73	1868552.84	6583468.32	34 1268492	-117.9279622	563.12

VAPOR WELLS					
WELL	NORTH	EAST	LATITUDE (DD)	LONGITUDE (DD)	FS (ELEVATION)
SVMW-33	1869011.31	6583553.93	34 1281089	-117.9276783	570.85
SVMW-37	1868982.87	6583419.40	34 1280310	-117.9281229	568.44

DATE OF SURVEY: MARCH 29, 2006

BORE HOLES					
WELL	NORTH	EAST	LATITUDE (DD)	LONGITUDE (DD)	FS (ELEVATION)
PIZB-4A	1868764.37	6583393.65	34 1274306	-117.9282085	566.71
PSZB-53	1869146.55	6583314.10	34 1284810	-117.9284704	568.65
PSZB-53A	1869146.03	6583320.45	34 1284795	-117.9284494	568.69

APPENDIX C

LABORATORY REPORTS AND CHAIN-OF- CUSTODY FORMS

MARCH AND APRIL 2005 SAMPLING





Del Mar Analytical

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LABORATORY REPORT

Prepared For: Geomatrix-Corona
250 East Rincon Street, Suite 204
Corona, CA 92879
Attention: Rick Rees

Project: Aerojet Azusa
007190.001.0

Sampled: 03/21/05
Received: 03/21/05
Issued: 03/22/05 15:55

NELAP #01108CA California ELAP#1197 CSDLAC #10117

The results listed within this Laboratory Report pertain only to the samples tested in the laboratory. The analyses contained in this report were performed in accordance with the applicable certifications as noted. All soil samples are reported on a wet weight basis unless otherwise noted in the report. This Laboratory Report is confidential and is intended for the sole use of Del Mar Analytical and its client. This report shall not be reproduced, except in full, without written permission from Del Mar Analytical.

This entire report was reviewed and approved for release.

SAMPLE CROSS REFERENCE

LABORATORY ID	CLIENT ID	MATRIX
IOC1604-01	032105EB	Water
IOC1604-02	PSZB-21-1	Soil
IOC1604-03	PSZB-21-2 1/2	Soil
IOC1604-04	PSZB-21-5	Soil
IOC1604-05	PSZB-21-7 1/2	Soil
IOC1604-06	PSZB-21-10	Soil
IOC1604-07	PSZB-21-15	Soil
IOC1604-08	PSZB-21-20	Soil
IOC1604-09	PSZB-21-25	Soil
IOC1604-10	PSZB-21-30	Soil
IOC1604-11	PSZB-22-1	Soil
IOC1604-12	PSZB-22-2 1/2	Soil
IOC1604-13	PSZB-22-5	Soil
IOC1604-14	PSZB-22-7 1/2	Soil
IOC1604-15	PSZB-22-10	Soil
IOC1604-16	PSZB-22-15	Soil
IOC1604-17	PSZB-22-20	Soil
IOC1604-18	PSZB-22-30	Soil
IOC1604-19	PSZB-23-1	Soil
IOC1604-20	PSZB-23-2 1/2	Soil
IOC1604-21	PSZB-23-5	Soil
IOC1604-22	PSZB-23-7 1/2	Soil
IOC1604-23	PSZB-23-15	Soil

Del Mar Analytical, Irvine
Jim Hatfield
Project Manager



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Geomatrix-Corona
250 East Rincon Street, Suite 204
Corona, CA 92879
Attention: Rick Rees

Project ID: Aerojet Azusa
007190.001.0
Report Number: IOC1604

Sampled: 03/21/05
Received: 03/21/05

LABORATORY ID

IOC1604-24
IOC1604-25

CLIENT ID

PSZB-23-20
PSZB-23-25

MATRIX

Soil
Soil

Reviewed By:

Del Mar Analytical, Irvine
Jim Hatfield
Project Manager

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Geomatrix-Corona
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 Corona, CA 92879
 Attention: Rick Rees

Project ID: Aerojet Azusa
 007190.001.0
 Report Number: IOC1604

Sampled: 03/21/05
 Received: 03/21/05

INORGANICS

Analyte	Method	Batch	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IOC1604-01 (032105EB - Water)								
Reporting Units: ug/l								
Perchlorate	EPA 314.0	5C21050	3.0	ND	1	3/21/2005	3/21/2005	
Sample ID: IOC1604-02 (PSZB-21-1 - Soil)								
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	5C21112	0.040	ND	1	3/21/2005	3/21/2005	
Sample ID: IOC1604-03 (PSZB-21-2 1/2 - Soil)								
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	5C21112	0.040	ND	1	3/21/2005	3/21/2005	
Sample ID: IOC1604-04 (PSZB-21-5 - Soil)								
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	5C21112	0.040	ND	1	3/21/2005	3/21/2005	
Sample ID: IOC1604-05 (PSZB-21-7 1/2 - Soil)								
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	5C21112	0.040	ND	1	3/21/2005	3/22/2005	
Sample ID: IOC1604-06 (PSZB-21-10 - Soil)								
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	5C21112	0.040	ND	1	3/21/2005	3/22/2005	
Sample ID: IOC1604-07 (PSZB-21-15 - Soil)								
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	5C21112	0.040	ND	1	3/21/2005	3/22/2005	
Sample ID: IOC1604-08 (PSZB-21-20 - Soil)								
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	5C21112	0.040	ND	1	3/21/2005	3/22/2005	
Sample ID: IOC1604-09 (PSZB-21-25 - Soil)								
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	5C21112	0.040	ND	1	3/21/2005	3/22/2005	
Sample ID: IOC1604-10 (PSZB-21-30 - Soil)								
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	5C21112	0.040	ND	1	3/21/2005	3/22/2005	

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Geomatrix-Corona
250 East Rincon Street, Suite 204
Corona, CA 92879
Attention: Rick Rees

Project ID: Aerojet Azusa
007190.001.0
Report Number: IOC1604

Sampled: 03/21/05
Received: 03/21/05

INORGANICS

Analyte	Method	Batch	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IOC1604-11 (PSZB-22-1 - Soil)								
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	5C21112	0.040	ND	1	3/21/2005	3/22/2005	
Sample ID: IOC1604-12 (PSZB-22-2 1/2 - Soil)								
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	5C21112	0.040	ND	1	3/21/2005	3/22/2005	
Sample ID: IOC1604-13 (PSZB-22-5 - Soil)								
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	5C21112	0.040	ND	1	3/21/2005	3/22/2005	
Sample ID: IOC1604-14 (PSZB-22-7 1/2 - Soil)								
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	5C21112	0.040	ND	1	3/21/2005	3/22/2005	
Sample ID: IOC1604-15 (PSZB-22-10 - Soil)								
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	5C21112	0.040	ND	1	3/21/2005	3/22/2005	
Sample ID: IOC1604-16 (PSZB-22-15 - Soil)								
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	5C21112	0.040	ND	1	3/21/2005	3/22/2005	
Sample ID: IOC1604-17 (PSZB-22-20 - Soil)								
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	5C21112	0.040	ND	1	3/21/2005	3/22/2005	
Sample ID: IOC1604-18 (PSZB-22-30 - Soil)								
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	5C21112	0.040	ND	1	3/21/2005	3/22/2005	
Sample ID: IOC1604-19 (PSZB-23-1 - Soil)								
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	5C21112	0.040	ND	1	3/21/2005	3/22/2005	
Sample ID: IOC1604-20 (PSZB-23-2 1/2 - Soil)								
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	5C21112	0.040	0.42	1	3/21/2005	3/22/2005	

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Attention: Rick Rees

Project ID: Aerojet Azusa
007190.001.0
Report Number: IOC1604

Sampled: 03/21/05
Received: 03/21/05

INORGANICS

Analyte	Method	Batch	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IOC1604-21 (PSZB-23-5 - Soil)								
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	5C21112	4.0	52	100	3/21/2005	3/22/2005	
Sample ID: IOC1604-22 (PSZB-23-7 1/2 - Soil)								
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	5C21113	4.0	66	100	3/21/2005	3/22/2005	M-HA
Sample ID: IOC1604-23 (PSZB-23-15 - Soil)								
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	5C21113	0.20	1.6	5	3/21/2005	3/22/2005	
Sample ID: IOC1604-24 (PSZB-23-20 - Soil)								
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	5C21113	0.040	0.58	1	3/21/2005	3/22/2005	
Sample ID: IOC1604-25 (PSZB-23-25 - Soil)								
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	5C21113	0.20	1.4	5	3/21/2005	3/22/2005	

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 Attention: Rick Rees

Project ID: Aerojet Azusa
 007190.001.0
 Report Number: IOC1604

Sampled: 03/21/05
 Received: 03/21/05

METHOD BLANK/QC DATA

INORGANICS

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC %REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 5C21050 Extracted: 03/21/05									
Blank Analyzed: 03/21/2005 (5C21050-BLK1)									
Perchlorate	ND	3.0	ug/l						
LCS Analyzed: 03/21/2005 (5C21050-BS1)									
Perchlorate	48.9	3.0	ug/l	50.0		98 85-115			
Matrix Spike Analyzed: 03/21/2005 (5C21050-MS1)									
Perchlorate	55.5	3.0	ug/l	50.0	1.7	108 80-120			
Matrix Spike Dup Analyzed: 03/21/2005 (5C21050-MSD1)									
Perchlorate	58.7	3.0	ug/l	50.0	1.7	114 80-120	6	20	
Batch: 5C21112 Extracted: 03/21/05									
Blank Analyzed: 03/21/2005 (5C21112-BLK1)									
Perchlorate	ND	0.040	mg/kg						
LCS Analyzed: 03/21/2005 (5C21112-BS1)									
Perchlorate	0.546	0.040	mg/kg	0.500		109 85-115			
Matrix Spike Analyzed: 03/21/2005 (5C21112-MS1)									
Perchlorate	0.513	0.040	mg/kg	0.500	ND	103 80-120			
Matrix Spike Dup Analyzed: 03/21/2005 (5C21112-MSD1)									
Perchlorate	0.515	0.040	mg/kg	0.500	ND	103 80-120	0	20	
Batch: 5C21113 Extracted: 03/21/05									
Blank Analyzed: 03/22/2005 (5C21113-BLK1)									
Perchlorate	ND	0.040	mg/kg						

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007190.001.0
Report Number: IOC1604

Sampled: 03/21/05
Received: 03/21/05

METHOD BLANK/QC DATA

INORGANICS

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 5C21113 Extracted: 03/21/05									
LCS Analyzed: 03/22/2005 (5C21113-BS1)									
Perchlorate	0.566	0.040	mg/kg	0.500		113 85-115			
Matrix Spike Analyzed: 03/22/2005 (5C21113-MS1)									
Perchlorate	73.0	4.0	mg/kg	0.500	66	1400 80-120			M-HA
Matrix Spike Dup Analyzed: 03/22/2005 (5C21113-MSD1)									
Perchlorate	81.6	4.0	mg/kg	0.500	66	3120 80-120	11	20	M-HA

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Project ID: Aerojet Azusa
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Report Number: IOC1604

Sampled: 03/21/05
Received: 03/21/05

DATA QUALIFIERS AND DEFINITIONS

M-HA Due to high levels of analyte in the sample, the MS/MSD calculation does not provide useful spike recovery information. See Blank Spike (LCS).
ND Analyte NOT DETECTED at or above the reporting limit or MDL, if MDL is specified.
RPD Relative Percent Difference

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Project Manager

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007190.001.0
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Sampled: 03/21/05
Received: 03/21/05

Certification Summary

Del Mar Analytical, Irvine

Method	Matrix	Nelac	California
EPA 314.0 MOD.	Soil	N/A	X
EPA 314.0	Water	N/A	X


Nevada and NELAP provide analyte specific accreditations. Analyte specific information for Del Mar Analytical may be obtained by contacting the laboratory or visiting our website at www.dmalabs.com.

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Project Manager

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IOC1604 <Page 9 of 9>

12X1624

Chain-of-Custody Record			12097															Date 3-21-05		Page 1 of 2	
Project No 7190.003			ANALYSES															REMARKS			
Samplers (Signatures)			Soil (S), Water (W), Vapor (V), or Other	EPA Method 8270	TPHg by 8015	TPHg by 8015	TPH	EPA 8260	EPA 8021	Title 22 Metals	Hold	PERC/NUMATE EPA 314							Acidified	No. of containers	Additional Comments
Date	Time	Sample Number																			
3-21-05	08:55	032105EB	W									X									407 Jar
3-21-05	09:45	PS2B-21-1	S									X									
3-21-05	09:55	PS2B-21-2 1/2	S									X									
3-21-05	10:00	PS2B-21-5	S									X									
3-21-05	10:05	PS2B-21-7 1/2	S									X									
3-21-05	10:10	PS2B-21-10	S									X									
3-21-05	10:25	PS2B-21-15	S									X									
3-21-05	10:40	PS2B-21-20	S									X									
3-21-05	10:45	PS2B-21-25	S									X									
3-21-05	10:55	PS2B-21-30	S									X									
3-21-05	11:55	PS2B-22-1	S									X									
3-21-05	12:28	PS2B-22-2 1/2	S									X									
3-21-05	12:30	PS2B-22-5	S									X									
3-21-05	12:33	PS2B-22-7 1/2	S									X									
3-21-05	12:35	PS2B-22-10	S									X									
Turnaround Time 24 Hours			Results To Rick REESE & Paul JEFFERS										Total No. of containers 15								
Relinquished by (signature): Paul JEFFERS		Date: 3-21	Relinquished by (signature): Emilio AGILES		Date: 3/21/05	Relinquished by (signature):		Date:	Method of shipment: LAS COVERED PICK-UP												
Printed Name: PAUL JEFFERS		Time: 17:20	Printed Name: Emilio AGILES		Time: 18:45	Printed Name:		Time:	Laboratory comments and Log No												
Company: GEOMATRIX			Company: DELMAR AN			Company:															
Received (signature): Emilio AGILES		Date: 3/21/05	Received (signature): WILL KIM		Date: 3/21/05	Received (signature):		Date:	 Geomatrix Consultants 250 E. Rincon, Suite 204 Corona, California 92879 (951) 273-7400												
Printed Name: Emilio AGILES		Time: 7:20	Printed Name: WILL KIM		Time: 18:45	Printed Name:		Time:													
Company: DELMAR			Company: DMAT			Company:															

contact 411



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LABORATORY REPORT

Prepared For: Geomatrix-Corona
250 East Rincon Street, Suite 204
Corona, CA 92879
Attention: Rick Rees

Project: Aerojet Azusa
007190.003.0

Sampled: 03/22/05
Received: 03/22/05
Issued: 03/23/05 15:17

NELAP #01108CA California ELAP#1197 CSDLAC #10117

The results listed within this Laboratory Report pertain only to the samples tested in the laboratory. The analyses contained in this report were performed in accordance with the applicable certifications as noted. All soil samples are reported on a wet weight basis unless otherwise noted in the report. This Laboratory Report is confidential and is intended for the sole use of Del Mar Analytical and its client. This report shall not be reproduced, except in full, without written permission from Del Mar Analytical. The Chain(s) of Custody, 2 pages, are included and are an integral part of this report. This entire report was reviewed and approved for release.

SAMPLE CROSS REFERENCE

LABORATORY ID	CLIENT ID	MATRIX
IOC1696-01	PSZB-24-1	Soil
IOC1696-02	PSZB-24-2.5	Soil
IOC1696-03	PSZB-24-5	Soil
IOC1696-04	PSZB-24-10	Soil
IOC1696-05	PSZB-24-15	Soil
IOC1696-06	PSZB-24-20	Soil
IOC1696-07	PSZB-24-25	Soil
IOC1696-08	PSZB-24-30	Soil
IOC1696-09	PSZB-39-1.5	Soil
IOC1696-10	PSZB-39-2.5	Soil
IOC1696-11	PSZB-39-5	Soil
IOC1696-12	PSZB-39-7.5	Soil
IOC1696-13	PSZB-39-10	Soil
IOC1696-14	PSZB-39-15	Soil
IOC1696-15	PSZB-39-20	Soil
IOC1696-16	PSZB-39-25	Soil
IOC1696-17	PSZB-39-30	Soil
IOC1696-18	PSZB-40-1	Soil
IOC1696-19	PSZB-40-2.5	Soil
IOC1696-20	PSZB-40-5	Soil
IOC1696-21	PSZB-40-7.5	Soil
IOC1696-22	PSZB-40-10	Soil
IOC1696-23	PSZB-40-30	Soil

Del Mar Analytical, Irvine
Jim Hatfield
Project Manager



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Geomatrix-Corona
250 East Rincon Street, Suite 204
Corona, CA 92879
Attention: Rick Rees

Project ID: Aerojet Azusa
007190.003.0
Report Number: IOC1696

Sampled: 03/22/05
Received: 03/22/05

LABORATORY ID

IOC1696-24
IOC1696-25

CLIENT ID

PSZB-40-15
PSZB-40-20

MATRIX

Soil
Soil

Reviewed By:

Del Mar Analytical, Irvine
Jim Hatfield
Project Manager

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Geomatrix-Corona
250 East Rincon Street, Suite 204
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Attention: Rick Rees

Project ID: Aerojet Azusa
007190.003.0
Report Number: IOC1696

Sampled: 03/22/05
Received: 03/22/05

INORGANICS

Analyte	Method	Batch	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IOC1696-01 (PSZB-24-1 - Soil)								
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	5C22121	0.040	ND	1	3/22/2005	3/23/2005	
Sample ID: IOC1696-02 (PSZB-24-2.5 - Soil)								
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	5C22121	0.040	0.086	1	3/22/2005	3/23/2005	
Sample ID: IOC1696-03 (PSZB-24-5 - Soil)								
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	5C22121	0.80	14	20	3/22/2005	3/23/2005	
Sample ID: IOC1696-04 (PSZB-24-10 - Soil)								
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	5C22121	0.040	ND	1	3/22/2005	3/23/2005	
Sample ID: IOC1696-05 (PSZB-24-15 - Soil)								
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	5C22121	0.040	0.043	1	3/22/2005	3/23/2005	
Sample ID: IOC1696-06 (PSZB-24-20 - Soil)								
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	5C22121	0.040	ND	1	3/22/2005	3/23/2005	
Sample ID: IOC1696-07 (PSZB-24-25 - Soil)								
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	5C22121	0.040	0.12	1	3/22/2005	3/23/2005	
Sample ID: IOC1696-08 (PSZB-24-30 - Soil)								
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	5C22121	0.040	0.12	1	3/22/2005	3/23/2005	
Sample ID: IOC1696-09 (PSZB-39-1.5 - Soil)								
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	5C22121	0.040	ND	1	3/22/2005	3/23/2005	
Sample ID: IOC1696-10 (PSZB-39-2.5 - Soil)								
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	5C22121	0.040	ND	1	3/22/2005	3/23/2005	

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Jim Hatfield
Project Manager

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Geomatrix-Corona
 250 East Rincon Street, Suite 204
 Corona, CA 92879
 Attention: Rick Rees

Project ID: Aerojet Azusa
 007190.003.0
 Report Number: IOC1696

Sampled: 03/22/05
 Received: 03/22/05

INORGANICS

Analyte	Method	Batch	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IOC1696-11 (PSZB-39-5 - Soil)								
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	5C22121	0.040	ND	1	3/22/2005	3/23/2005	
Sample ID: IOC1696-12 (PSZB-39-7.5 - Soil)								
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	5C22121	0.040	ND	1	3/22/2005	3/23/2005	
Sample ID: IOC1696-13 (PSZB-39-10 - Soil)								
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	5C22121	0.040	ND	1	3/22/2005	3/23/2005	
Sample ID: IOC1696-14 (PSZB-39-15 - Soil)								
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	5C22121	0.040	ND	1	3/22/2005	3/23/2005	
Sample ID: IOC1696-15 (PSZB-39-20 - Soil)								
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	5C22121	0.040	ND	1	3/22/2005	3/23/2005	
Sample ID: IOC1696-16 (PSZB-39-25 - Soil)								
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	5C22121	0.040	ND	1	3/22/2005	3/23/2005	
Sample ID: IOC1696-17 (PSZB-39-30 - Soil)								
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	5C22121	0.040	ND	1	3/22/2005	3/23/2005	
Sample ID: IOC1696-18 (PSZB-40-1 - Soil)								
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	5C22121	0.040	ND	1	3/22/2005	3/23/2005	
Sample ID: IOC1696-19 (PSZB-40-2.5 - Soil)								
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	5C22121	0.040	ND	1	3/22/2005	3/23/2005	
Sample ID: IOC1696-20 (PSZB-40-5 - Soil)								
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	5C22121	0.040	ND	1	3/22/2005	3/23/2005	

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 Jim Hatfield
 Project Manager

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Geomatrix-Corona
250 East Rincon Street, Suite 204
Corona, CA 92879
Attention: Rick Rees

Project ID: Aerojet Azusa
007190.003.0
Report Number: IOC1696

Sampled: 03/22/05
Received: 03/22/05

INORGANICS

Analyte	Method	Batch	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IOC1696-21 (PSZB-40-7.5 - Soil)								
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	5C22122	0.040	ND	1	3/22/2005	3/23/2005	
Sample ID: IOC1696-22 (PSZB-40-10 - Soil)								
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	5C22122	0.040	ND	1	3/22/2005	3/23/2005	
Sample ID: IOC1696-23 (PSZB-40-30 - Soil)								
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	5C22122	0.040	ND	1	3/22/2005	3/23/2005	
Sample ID: IOC1696-24 (PSZB-40-15 - Soil)								
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	5C22122	0.040	ND	1	3/22/2005	3/23/2005	
Sample ID: IOC1696-25 (PSZB-40-20 - Soil)								
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	5C22122	0.040	ND	1	3/22/2005	3/23/2005	

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 Attention: Rick Rees

Project ID: Aerojet Azusa
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 Report Number: IOC1696

Sampled: 03/22/05
 Received: 03/22/05

METHOD BLANK/QC DATA

INORGANICS

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 5C22121 Extracted: 03/22/05										
Blank Analyzed: 03/23/2005 (5C22121-BLK1)										
Perchlorate	ND	0.040	mg/kg							
LCS Analyzed: 03/23/2005 (5C22121-BS1)										
Perchlorate	0.533	0.040	mg/kg	0.500		107	85-115			
Matrix Spike Analyzed: 03/23/2005 (5C22121-MS1)										
Perchlorate	0.594	0.040	mg/kg	0.500	0.020	115	80-120			
Matrix Spike Dup Analyzed: 03/23/2005 (5C22121-MSD1)										
Perchlorate	0.566	0.040	mg/kg	0.500	0.020	109	80-120	5	20	
Batch: 5C22122 Extracted: 03/22/05										
Blank Analyzed: 03/23/2005 (5C22122-BLK1)										
Perchlorate	ND	0.040	mg/kg							
LCS Analyzed: 03/23/2005 (5C22122-BS1)										
Perchlorate	0.509	0.040	mg/kg	0.500		102	85-115			
Matrix Spike Analyzed: 03/23/2005 (5C22122-MS1)										
Perchlorate	0.528	0.040	mg/kg	0.500	ND	106	80-120			
Matrix Spike Dup Analyzed: 03/23/2005 (5C22122-MSD1)										
Perchlorate	0.509	0.040	mg/kg	0.500	ND	102	80-120	4	20	

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Sampled: 03/22/05
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DATA QUALIFIERS AND DEFINITIONS

ND Analyte NOT DETECTED at or above the reporting limit or MDL, if MDL is specified.
RPD Relative Percent Difference

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Attention: Rick Rees

Project ID: Aerojet Azusa
007190.003.0
Report Number: IOC1696

Sampled: 03/22/05
Received: 03/22/05

Certification Summary

Del Mar Analytical, Irvine

Method	Matrix	Nelac	California
EPA 314.0 MOD.	Soil	N/A	N/A



Nevada and NELAP provide analyte specific accreditations. Analyte specific information for Del Mar Analytical may be obtained by contacting the laboratory or visiting our website at www.dmalabs.com.

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IOC1696 <Page 8 of 8>

4358

Chain-of-Custody Record				12099												Date 3-22-05		Page 1 of 2	
Project NO 7190.003			ANALYSES												REMARKS				
Samplers (Signatures)			Soil (S), Water (W), Vapor (V), or Other	EPA Method 8270	TPHg by 8015	TPHd by 8015	TPH	EPA 8260	EPA 8021	Title 22 Metals	Hold	Perchlorate EPA 314	Acidified	No of containers	Additional Comments				
Date	Time	Sample Number																	
3-22-05	0824	PS2B-24-1	S									X			-	1	1001696		
3-22-05	0838	PS2B-24-2	S									X			-	1			
3-22-05	0845	PS2B-24-5	S									X			-	1			
3-22-05	0855	PS2B-24-10	S									X			-	1			
3-22-05	0902	PS2B-24-15	S									X			-	1			
3-22-05	0908	PS2B-24-20	S									X			-	1			
3-22-05	1015	PS2B-24-25	S									X			-	1			
3-22-05	1023	PS2B-24-30	S									X			-	1			
3-22-05	1225	PS2B-29-1.5	S									X			-	1			
3-22-05	1245	PS2B-29-2.5	S									X			-	1			
3-22-05	1255	PS2B-29-5	S									X			-	1			
3-22-05	1300	PS2B-29-7.5	S									X			-	1			
3-22-05	1305	PS2B-29-10	S									X			-	1			
3-22-05	1309	PS2B-29-15	S									X			-	1			
3-22-05	1317	PS2B-29-20	S									X			-	1			
Turnaround Time: 24 Hour			Results To: Rick Rees & Paul Jeffers									Total No of containers: 15							
Relinquished by (signature)		Date: 3-22-05	Relinquished by (signature)		Date: 3-22-05	Relinquished by (signature):		Date:	Method of shipment: LAB COURIER Pick-up										
Printed Name: Lucas E. Budry		Time: 1608	Printed Name: Gary Schlager		Time: 1850	Printed Name:		Time:	Laboratory comments and Log No.										
Company: Geomatrix			Company: DMAT			Company:													
Received (signature)		Date: 3-22-05	Received (signature)		Date: 3/24/05	Received (signature):		Date:	 Geomatrix Consultants 250 E. Rincon, Suite 204 Corona, California 92679 (951) 273-7400										
Printed Name: Gary Schlager		Time: 1608	Printed Name: Stacy Gunnawan		Time: 1850	Printed Name:		Time:											
Company: DMAT			Company: DMAT			Company:													

350

Chain-of-Custody Record				12101										Date: 3-22-05		Page 2 of 2	
Project No 7190.003			ANALYSES										REMARKS				
Samplers (Signatures):			Soil (S), Water (W), Vapor (V) or Other	EPA Method 8270	TPHG by 8015	TPHG by 8015	TPH	EPA 8260	EPA 8021	Title 22 Metals	Held	EPA 8214	Acidified	No of containers	Additional Comments		
Date	Time	Sample Number															
03-22-05	1325	PS2B-29-25	S									X	-	1	402 jms		
	1335	PS2B-29-30	S									X	-	1			
	1415	PS2B-40-1	S									X	-	1			
	1420	PS2B-40-25	S									X	-	1			
	1426	PS2B-40-5	S									X	-	1			
	1430	PS2B-40-7.5	S									X	-	1			
	1435	PS2B-40-10	S									X	-	1			
	1515	PS2B-40-30	S									X	-	1			
	1445	PS2B-40-15	S									X	-	1			
V	1455	PS2B-40-20	S									X	-	1			
Turnaround Time: 24 hour			Results To: Rick Rees; Paul Telfers										Total No of containers: 10				
Relinquished by (signature):		Date: 3-22-05	Relinquished by (signature):		Date: 3-22-05	Relinquished by (signature):		Date: 3-22-05	Method of shipment: Lab Courier Pick up								
Printed Name: Lucas E. Budy		Time: 1608	Printed Name: Gary Schlegel		Time: 1850	Printed Name:		Time:	Laboratory comments and Log No.:								
Company: Geomatrix			Company: DMAI			Company:											
Received (signature):		Date: 3-22-05	Received (signature):		Date: 3-22-05	Received (signature):		Date: 3-22-05									
Printed Name: Gary Schlegel		Time: 1608	Printed Name: Gary Schlegel		Time: 1850	Printed Name:		Time:									
Company: DMAI			Company: DMAI			Company:											

306



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LABORATORY REPORT

Prepared For: Geomatrix-Corona
250 East Rincon Street, Suite 204
Corona, CA 92879
Attention: Rick Rees

Project: Aerojet Azusa
007190.003.0

Sampled: 03/23/05
Received: 03/23/05
Issued: 03/24/05 14:17

NELAP #01108CA California ELAP#1197 CSDLAC #10117

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This entire report was reviewed and approved for release.

SAMPLE CROSS REFERENCE

LABORATORY ID	CLIENT ID	MATRIX
IOC1758-01	PSZB-27-1	Soil
IOC1758-02	PSZB-27-2 1/2	Soil
IOC1758-03	PSZB-27-5	Soil
IOC1758-04	PSZB-27-7 1/2	Soil
IOC1758-05	PSZB-27-10	Soil
IOC1758-06	PSZB-27-15	Soil
IOC1758-07	PSZB-27-20	Soil

Reviewed By:

Del Mar Analytical, Irvine
Jim Hatfield
Project Manager



Del Mar Analytical

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Geomatrix-Corona
 250 East Rincon Street, Suite 204
 Corona, CA 92879
 Attention: Rick Rees

Project ID: Aerojet Azusa
 007190.003.0
 Report Number: IOC1758

Sampled: 03/23/05
 Received: 03/23/05

INORGANICS

Analyte	Method	Batch	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IOC1758-01 (PSZB-27-1 - Soil)								
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	5C23111	0.040	0.73	1	3/23/2005	3/23/2005	
Sample ID: IOC1758-02 (PSZB-27-2 1/2 - Soil)								
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	5C23111	0.40	2.3	10	3/23/2005	3/24/2005	
Sample ID: IOC1758-03 (PSZB-27-5 - Soil)								
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	5C23111	0.040	ND	1	3/23/2005	3/24/2005	
Sample ID: IOC1758-04 (PSZB-27-7 1/2 - Soil)								
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	5C23111	0.040	ND	1	3/23/2005	3/24/2005	
Sample ID: IOC1758-05 (PSZB-27-10 - Soil)								
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	5C23111	0.040	ND	1	3/23/2005	3/24/2005	
Sample ID: IOC1758-06 (PSZB-27-15 - Soil)								
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	5C23111	0.040	ND	1	3/23/2005	3/24/2005	
Sample ID: IOC1758-07 (PSZB-27-20 - Soil)								
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	5C23111	0.040	ND	1	3/23/2005	3/24/2005	

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Attention: Rick Rees

Project ID: Aerojet Azusa
007190.003.0
Report Number: IOC1758

Sampled: 03/23/05
Received: 03/23/05

METHOD BLANK/QC DATA

INORGANICS

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC %REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 5C23111 Extracted: 03/23/05										
Blank Analyzed: 03/23/2005 (5C23111-BLK1)										
Perchlorate	ND	0.040	mg/kg							
LCS Analyzed: 03/23/2005 (5C23111-BS1)										
Perchlorate	0.548	0.040	mg/kg	0.500		110	85-115			M-3

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IOC1758 <Page 3 of 5>



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Project ID: Aerojet Azusa
007190.003.0
Report Number: IOC1758

Sampled: 03/23/05
Received: 03/23/05

DATA QUALIFIERS AND DEFINITIONS

- M-3** Results exceeded the linear range in the MS/MSD and therefore are not available for reporting. The batch was accepted based on acceptable recovery in the Blank Spike (LCS).
- ND** Analyte NOT DETECTED at or above the reporting limit or MDL, if MDL is specified.
- RPD** Relative Percent Difference

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Report Number: IOC1758

Sampled: 03/23/05
Received: 03/23/05

Certification Summary

Del Mar Analytical, Irvine

Method	Matrix	Nelac	California
EPA 314.0 MOD.	Soil	N/A	N/A

Nevada and NELAP provide analyte specific accreditations. Analyte specific information for Del Mar Analytical may be obtained by contacting the laboratory or visiting our website at www.dmalabs.com.

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IOC1758 <Page 5 of 5>

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LABORATORY REPORT

Prepared For: Geomatrix-Corona
250 East Rincon Street, Suite 204
Corona, CA 92879
Attention: Rick Rees

Project: Aerojet Azusa
007190.003.0

Sampled: 03/24/05
Received: 03/24/05
Issued: 03/25/05 12:17

NELAP #01108CA California ELAP#1197 CSDLAC #10117

The results listed within this Laboratory Report pertain only to the samples tested in the laboratory. The analyses contained in this report were performed in accordance with the applicable certifications as noted. All soil samples are reported on a wet weight basis unless otherwise noted in the report. This Laboratory Report is confidential and is intended for the sole use of Del Mar Analytical and its client. This report shall not be reproduced, except in full, without written permission from Del Mar Analytical.

This entire report was reviewed and approved for release

SAMPLE CROSS REFERENCE

LABORATORY ID	CLIENT ID	MATRIX
IOC1933-01	PSZB-27A-25	Soil
IOC1933-02	PSZB-27A-30	Soil
IOC1933-03	PSZB-28-1	Soil
IOC1933-04	PSZB-28-2 1/2	Soil
IOC1933-05	PSZB-28-5	Soil
IOC1933-06	PSZB-28-10	Soil
IOC1933-07	PSZB-28-15	Soil
IOC1933-08	PSZB-28-20	Soil
IOC1933-09	PSZB-28-25	Soil
IOC1933-10	PSZB-28-30	Soil
IOC1933-11	PSZB-29-1	Soil
IOC1933-12	PSZB-29-2 1/2	Soil
IOC1933-13	PSZB-29-5	Soil
IOC1933-14	PSZB-29-7 1/2	Soil
IOC1933-15	PSZB-29-10	Soil
IOC1933-16	PSZB-29-15	Soil
IOC1933-17	PSZB-29-20	Soil
IOC1933-18	PSZB-29-25	Soil
IOC1933-19	PSZB-29-30	Soil
IOC1933-20	PSZB-30-1	Soil
IOC1933-21	PSZB-30-2 1/2	Soil
IOC1933-22	PSZB-30-5	Soil
IOC1933-23	PSZB-30-7 1/2	Soil

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007190.003.0
Report Number: IOC1933

Sampled: 03/24/05
Received: 03/24/05

LABORATORY ID	CLIENT ID	MATRIX
IOC1933-24	PSZB-30-10	Soil
IOC1933-25	PSZB-30-15	Soil
IOC1933-26	PSZB-30-20	Soil
IOC1933-27	PSZB-30-25	Soil
IOC1933-28	PSZB-30-30	Soil

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Attention: Rick Rees

Project ID: Aerojet Azusa
007190 003.0
Report Number: IOC1933

Sampled: 03/24/05
Received: 03/24/05

INORGANICS

Analyte	Method	Batch	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IOC1933-01 (PSZB-27A-25 - Soil)								
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	5C24118	0.040	ND	1	3/24/2005	3/24/2005	
Sample ID: IOC1933-02 (PSZB-27A-30 - Soil)								
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	5C24118	0.040	ND	1	3/24/2005	3/24/2005	
Sample ID: IOC1933-03 (PSZB-28-1 - Soil)								
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	5C24118	0.040	ND	1	3/24/2005	3/24/2005	
Sample ID: IOC1933-04 (PSZB-28-2 1/2 - Soil)								
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	5C24118	0.040	ND	1	3/24/2005	3/24/2005	
Sample ID: IOC1933-05 (PSZB-28-5 - Soil)								
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	5C24118	0.040	ND	1	3/24/2005	3/24/2005	
Sample ID: IOC1933-06 (PSZB-28-10 - Soil)								
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	5C24118	0.040	ND	1	3/24/2005	3/24/2005	
Sample ID: IOC1933-07 (PSZB-28-15 - Soil)								
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	5C24118	0.040	ND	1	3/24/2005	3/25/2005	
Sample ID: IOC1933-08 (PSZB-28-20 - Soil)								
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	5C24118	0.040	ND	1	3/24/2005	3/25/2005	
Sample ID: IOC1933-09 (PSZB-28-25 - Soil)								
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	5C24118	0.040	ND	1	3/24/2005	3/25/2005	
Sample ID: IOC1933-10 (PSZB-28-30 - Soil)								
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	5C24118	0.040	ND	1	3/24/2005	3/25/2005	

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Attention: Rick Rees

Project ID: Aerojet Azusa
007190.003.0
Report Number: IOC1933

Sampled: 03/24/05
Received: 03/24/05

INORGANICS

Analyte	Method	Batch	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IOC1933-11 (PSZB-29-1 - Soil)								
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	5C24118	0.040	ND	1	3/24/2005	3/25/2005	
Sample ID: IOC1933-12 (PSZB-29-2 1/2 - Soil)								
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	5C24118	8.0	86	200	3/24/2005	3/25/2005	
Sample ID: IOC1933-13 (PSZB-29-5 - Soil)								
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	5C24118	0.040	0.46	1	3/24/2005	3/25/2005	
Sample ID: IOC1933-14 (PSZB-29-7 1/2 - Soil)								
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	5C24118	0.040	0.31	1	3/24/2005	3/25/2005	
Sample ID: IOC1933-15 (PSZB-29-10 - Soil)								
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	5C24119	0.040	0.18	1	3/24/2005	3/24/2005	
Sample ID: IOC1933-16 (PSZB-29-15 - Soil)								
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	5C24119	0.040	0.057	1	3/24/2005	3/24/2005	
Sample ID: IOC1933-17 (PSZB-29-20 - Soil)								
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	5C24119	0.040	0.058	1	3/24/2005	3/24/2005	
Sample ID: IOC1933-18 (PSZB-29-25 - Soil)								
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	5C24119	0.040	ND	1	3/24/2005	3/24/2005	
Sample ID: IOC1933-19 (PSZB-29-30 - Soil)								
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	5C24119	0.040	ND	1	3/24/2005	3/24/2005	
Sample ID: IOC1933-20 (PSZB-30-1 - Soil)								
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	5C24119	0.040	ND	1	3/24/2005	3/24/2005	

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Project ID: Aerojet Azusa
007190.003.0
Report Number: IOC1933

Sampled: 03/24/05
Received: 03/24/05

INORGANICS

Analyte	Method	Batch	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IOC1933-21 (PSZB-30-2 1/2 - Soil)								
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	5C24119	0.040	ND	1	3/24/2005	3/25/2005	
Sample ID: IOC1933-22 (PSZB-30-5 - Soil)								
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	5C24119	0.040	ND	1	3/24/2005	3/25/2005	
Sample ID: IOC1933-23 (PSZB-30-7 1/2 - Soil)								
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	5C24119	0.040	ND	1	3/24/2005	3/25/2005	
Sample ID: IOC1933-24 (PSZB-30-10 - Soil)								
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	5C24119	0.040	ND	1	3/24/2005	3/25/2005	
Sample ID: IOC1933-25 (PSZB-30-15 - Soil)								
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	5C24119	0.040	ND	1	3/24/2005	3/25/2005	
Sample ID: IOC1933-26 (PSZB-30-20 - Soil)								
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	5C24119	0.040	ND	1	3/24/2005	3/25/2005	
Sample ID: IOC1933-27 (PSZB-30-25 - Soil)								
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	5C24119	0.040	ND	1	3/24/2005	3/25/2005	
Sample ID: IOC1933-28 (PSZB-30-30 - Soil)								
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	5C24119	0.040	0.078	1	3/24/2005	3/25/2005	

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 Attention: Rick Rees

Project ID: Aerojet Azusa
 007190.003.0
 Report Number: IOC1933

Sampled: 03/24/05
 Received: 03/24/05

METHOD BLANK/QC DATA

INORGANICS

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 5C24118 Extracted: 03/24/05										
Blank Analyzed: 03/24/2005 (5C24118-BLK1)										
Perchlorate	ND	0.040	mg/kg							
LCS Analyzed: 03/25/2005 (5C24118-BS1)										
Perchlorate	0.522	0.040	mg/kg	0.500		104	85-115			
Matrix Spike Analyzed: 03/24/2005 (5C24118-MS1)										
Perchlorate	0.539	0.040	mg/kg	0.500	ND	108	80-120			
Matrix Spike Dup Analyzed: 03/24/2005 (5C24118-MSD1)										
Perchlorate	0.560	0.040	mg/kg	0.500	ND	112	80-120	4	20	
Batch: 5C24119 Extracted: 03/24/05										
Blank Analyzed: 03/24/2005 (5C24119-BLK1)										
Perchlorate	ND	0.040	mg/kg							
LCS Analyzed: 03/24/2005 (5C24119-BS1)										
Perchlorate	0.501	0.040	mg/kg	0.500		100	85-115			
Matrix Spike Analyzed: 03/24/2005 (5C24119-MS1)										
Perchlorate	0.679	0.040	mg/kg	0.500	0.18	100	80-120			
Matrix Spike Dup Analyzed: 03/24/2005 (5C24119-MSD1)										
Perchlorate	0.673	0.040	mg/kg	0.500	0.18	99	80-120	1	20	

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IOC1933 <Page 6 of 8>



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Sampled: 03/24/05
Received: 03/24/05

DATA QUALIFIERS AND DEFINITIONS

ND Analyte NOT DETECTED at or above the reporting limit or MDL, if MDL is specified.
RPD Relative Percent Difference

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Geomatrix-Corona
250 East Rincon Street, Suite 204
Corona, CA 92879
Attention: Rick Rees

Project ID: Aerojet Azusa
007190.003.0
Report Number: IOC1933

Sampled: 03/24/05
Received: 03/24/05

Certification Summary

Del Mar Analytical, Irvine

Method	Matrix	Nelac	California
EPA 314.0 MOD.	Soil	N/A	N/A

Nevada and NELAP provide analyte specific accreditations. Analyte specific information for Del Mar Analytical may be obtained by contacting the laboratory or visiting our website at www.dmalabs.com.

Del Mar Analytical, Irvine
Jim Hatfield
Project Manager

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IOC1933 <Page 8 of 8>



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LABORATORY REPORT

Prepared For: Geomatrix-Corona
250 East Rincon Street, Suite 204
Corona, CA 92879
Attention: Rick Rees

Project: Aerojet Azusa
007190.003.0

Sampled: 03/25/05
Received: 03/25/05
Issued: 03/28/05 14:04

NELAP #01108CA California ELAP#1197 CSDLAC #10117

The results listed within this Laboratory Report pertain only to the samples tested in the laboratory. The analyses contained in this report were performed in accordance with the applicable certifications as noted. All soil samples are reported on a wet weight basis unless otherwise noted in the report. This Laboratory Report is confidential and is intended for the sole use of Del Mar Analytical and its client. This report shall not be reproduced, except in full, without written permission from Del Mar Analytical. This entire report was reviewed and approved for release.

SAMPLE CROSS REFERENCE

LABORATORY ID	CLIENT ID	MATRIX
IOC2060-01	032505EB	Water
IOC2060-02	PSZB-31-1	Soil
IOC2060-03	PSZB-31-2 1/2	Soil
IOC2060-04	PSZB-31-5	Soil
IOC2060-05	PSZB-31-7 1/2	Soil
IOC2060-06	PSZB-31-10	Soil
IOC2060-07	PSZB-31-15	Soil
IOC2060-08	PSZB-31-20	Soil
IOC2060-09	PSZB-31-25	Soil
IOC2060-10	PSZB-31-30	Soil
IOC2060-11	PSZB-32-1	Soil
IOC2060-12	PSZB-32-2 1/2	Soil
IOC2060-13	PSZB-32-5	Soil
IOC2060-14	PSZB-32-7 1/2	Soil
IOC2060-15	PSZB-32-10	Soil
IOC2060-16	PSZB-32-15	Soil
IOC2060-17	PSZB-32-20	Soil
IOC2060-18	PSZB-32-25	Soil
IOC2060-19	PSZB-32-30	Soil
IOC2060-20	PSZB-33-1	Soil
IOC2060-21	PSZB-33-2 1/2	Soil
IOC2060-22	PSZB-33-5	Soil
IOC2060-23	PSZB-33-7 1/2	Soil

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Geomatrix-Corona
250 East Rincon Street, Suite 204
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Attention: Rick Rees

Project ID: Aerojet Azusa
007190.003.0
Report Number: IOC2060

Sampled: 03/25/05
Received: 03/25/05

LABORATORY ID	CLIENT ID	MATRIX
IOC2060-24	PSZB-33-10	Soil
IOC2060-25	PSZB-33-15	Soil
IOC2060-26	PSZB-33-20	Soil
IOC2060-27	PSZB-33-25	Soil
IOC2060-28	PSZB-33-30	Soil

Reviewed By:

Del Mar Analytical, Irvine
Jim Hatfield
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IOC2060 <Page 2 of 9>



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Geomatrix-Corona
250 East Rincon Street, Suite 204
Corona, CA 92879
Attention: Rick Rees

Project ID: Aerojet Azusa
007190.003.0
Report Number: IOC2060

Sampled: 03/25/05
Received: 03/25/05

INORGANICS

Analyte	Method	Batch	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IOC2060-01 (032505EB - Water)								
Reporting Units: ug/l								
Perchlorate	EPA 314.0	5C25061	3.0	ND	1	3/25/2005	3/25/2005	
Sample ID: IOC2060-02 (PSZB-31-1 - Soil)								
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	5C25108	0.040	ND	1	3/25/2005	3/25/2005	
Sample ID: IOC2060-03 (PSZB-31-2 1/2 - Soil)								
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	5C25108	0.040	0.061	1	3/25/2005	3/25/2005	
Sample ID: IOC2060-04 (PSZB-31-5 - Soil)								
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	5C25108	0.040	0.041	1	3/25/2005	3/25/2005	
Sample ID: IOC2060-05 (PSZB-31-7 1/2 - Soil)								
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	5C25108	0.040	ND	1	3/25/2005	3/26/2005	
Sample ID: IOC2060-06 (PSZB-31-10 - Soil)								
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	5C25108	0.040	ND	1	3/25/2005	3/26/2005	
Sample ID: IOC2060-07 (PSZB-31-15 - Soil)								
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	5C25108	0.040	0.29	1	3/25/2005	3/26/2005	
Sample ID: IOC2060-08 (PSZB-31-20 - Soil)								
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	5C25108	0.040	0.21	1	3/25/2005	3/26/2005	
Sample ID: IOC2060-09 (PSZB-31-25 - Soil)								
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	5C25108	0.040	0.45	1	3/25/2005	3/26/2005	
Sample ID: IOC2060-10 (PSZB-31-30 - Soil)								
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	5C25108	0.040	0.47	1	3/25/2005	3/26/2005	

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Geomatrix-Corona
 250 East Rincon Street, Suite 204
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 Attention: Rick Rees

Project ID: Aerojet Azusa
 007190.003.0
 Report Number: IOC2060

Sampled: 03/25/05
 Received: 03/25/05

INORGANICS

Analyte	Method	Batch	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IOC2060-11 (PSZB-32-1 - Soil)								
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	5C25108	0.040	ND	1	3/25/2005	3/26/2005	
Sample ID: IOC2060-12 (PSZB-32-2 1/2 - Soil)								
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	5C25108	0.040	0.76	1	3/25/2005	3/26/2005	
Sample ID: IOC2060-13 (PSZB-32-5 - Soil)								
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	5C25108	0.080	0.94	2	3/25/2005	3/26/2005	
Sample ID: IOC2060-14 (PSZB-32-7 1/2 - Soil)								
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	5C25108	20	75	500	3/25/2005	3/26/2005	
Sample ID: IOC2060-15 (PSZB-32-10 - Soil)								
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	5C25109	0.80	17	20	3/25/2005	3/26/2005	M-HA
Sample ID: IOC2060-16 (PSZB-32-15 - Soil)								
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	5C25109	0.040	0.051	1	3/25/2005	3/26/2005	
Sample ID: IOC2060-17 (PSZB-32-20 - Soil)								
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	5C25109	0.040	0.13	1	3/25/2005	3/26/2005	
Sample ID: IOC2060-18 (PSZB-32-25 - Soil)								
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	5C25109	0.040	0.070	1	3/25/2005	3/26/2005	
Sample ID: IOC2060-19 (PSZB-32-30 - Soil)								
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	5C25109	0.040	ND	1	3/25/2005	3/26/2005	
Sample ID: IOC2060-20 (PSZB-33-1 - Soil)								
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	5C25109	0.040	ND	1	3/25/2005	3/26/2005	

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 Jim Hatfield
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Geomatrix-Corona
250 East Rincon Street, Suite 204
Corona, CA 92879
Attention: Rick Rees

Project ID: Aerojet Azusa
007190.003.0
Report Number: IOC2060

Sampled: 03/25/05
Received: 03/25/05

INORGANICS

Analyte	Method	Batch	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IOC2060-21 (PSZB-33-2 1/2 - Soil)								
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	5C25109	0.040	ND	1	3/25/2005	3/26/2005	
Sample ID: IOC2060-22 (PSZB-33-5 - Soil)								
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	5C25109	0.040	ND	1	3/25/2005	3/26/2005	
Sample ID: IOC2060-23 (PSZB-33-7 1/2 - Soil)								
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	5C25109	0.040	0.13	1	3/25/2005	3/26/2005	
Sample ID: IOC2060-24 (PSZB-33-10 - Soil)								
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	5C25109	0.040	0.091	1	3/25/2005	3/26/2005	
Sample ID: IOC2060-25 (PSZB-33-15 - Soil)								
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	5C25109	0.040	0.053	1	3/25/2005	3/26/2005	
Sample ID: IOC2060-26 (PSZB-33-20 - Soil)								
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	5C25109	0.040	0.092	1	3/25/2005	3/26/2005	
Sample ID: IOC2060-27 (PSZB-33-25 - Soil)								
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	5C25109	0.040	0.10	1	3/25/2005	3/26/2005	
Sample ID: IOC2060-28 (PSZB-33-30 - Soil)								
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	5C25109	0.040	0.049	1	3/25/2005	3/26/2005	

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Project Manager

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Geomatrix-Corona
 250 East Rincon Street, Suite 204
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 Attention: Rick Rees

Project ID: Aerojet Azusa
 007190.003.0
 Report Number: IOC2060

Sampled: 03/25/05
 Received: 03/25/05

METHOD BLANK/QC DATA

INORGANICS

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 5C25061 Extracted: 03/25/05										
Blank Analyzed: 03/25/2005 (5C25061-BLK1)										
Perchlorate	ND	3.0	ug/l							
LCS Analyzed: 03/25/2005 (5C25061-BS1)										
Perchlorate	49.1	3.0	ug/l	50.0		98	85-115			
Matrix Spike Analyzed: 03/25/2005 (5C25061-MS1)										
Perchlorate	49.8	3.0	ug/l	50.0	1.3	97	80-120			
Matrix Spike Dup Analyzed: 03/25/2005 (5C25061-MSD1)										
Perchlorate	50.4	3.0	ug/l	50.0	1.3	98	80-120	1	20	
Batch: 5C25108 Extracted: 03/25/05										
Blank Analyzed: 03/25/2005 (5C25108-BLK1)										
Perchlorate	ND	0.040	mg/kg							
LCS Analyzed: 03/25/2005 (5C25108-BS1)										
Perchlorate	0.571	0.040	mg/kg	0.500		114	85-115			
Matrix Spike Analyzed: 03/25/2005 (5C25108-MS1)										
Perchlorate	0.525	0.040	mg/kg	0.500	ND	105	80-120			
Matrix Spike Dup Analyzed: 03/25/2005 (5C25108-MSD1)										
Perchlorate	0.581	0.040	mg/kg	0.500	ND	116	80-120	10	20	
Batch: 5C25109 Extracted: 03/25/05										
Blank Analyzed: 03/25/2005 (5C25109-BLK1)										
Perchlorate	ND	0.040	mg/kg							

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Geomatrix-Corona
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Attention: Rick Rees

Project ID: Aerojet Azusa
007190.003.0
Report Number: IOC2060

Sampled: 03/25/05
Received: 03/25/05

METHOD BLANK/QC DATA

INORGANICS

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC %REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 5C25109 Extracted: 03/25/05										
LCS Analyzed: 03/25/2005 (5C25109-BS1)										
Perchlorate	0.518	0.040	mg/kg	0.500		104	85-115			
Matrix Spike Analyzed: 03/26/2005 (5C25109-MS1)										
Perchlorate	18.6	0.80	mg/kg	0.500	17	320	80-120			M-HA
Matrix Spike Dup Analyzed: 03/26/2005 (5C25109-MSD1)										
Perchlorate	18.3	0.80	mg/kg	0.500	17	260	80-120	2	20	M-HA

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Geomatrix-Corona
250 East Rincon Street, Suite 204
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Attention: Rick Rees

Project ID: Aerojet Azusa
007190.003.0
Report Number: IOC2060

Sampled: 03/25/05
Received: 03/25/05

DATA QUALIFIERS AND DEFINITIONS

M-HA Due to high levels of analyte in the sample, the MS/MSD calculation does not provide useful spike recovery information. See Blank Spike (LCS).
ND Analyte NOT DETECTED at or above the reporting limit or MDL, if MDL is specified.
RPD Relative Percent Difference

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Geomatrix-Corona
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Project ID: Aerojet Azusa
007190.003.0
Report Number: IOC2060

Sampled: 03/25/05
Received: 03/25/05

Certification Summary

Del Mar Analytical, Irvine

Method	Matrix	Nelac	California
EPA 314.0 MOD.	Soil	N/A	X
EPA 314.0	Water	N/A	X

Nevada and NELAP provide analyte specific accreditations. Analyte specific information for Del Mar Analytical may be obtained by contacting the laboratory or visiting our website at www.dmalabs.com

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LABORATORY REPORT

Prepared For: Geomatrix-Corona
250 East Rincon Street, Suite 204
Corona, CA 92879
Attention: Rick Rees

Project: Aerojet Azusa
007190.003.0

Sampled: 03/28/05
Received: 03/28/05
Issued: 03/29/05 17:09

NELAP #01108CA California ELAP#1197 CSDLAC #10117

The results listed within this Laboratory Report pertain only to the samples tested in the laboratory. The analyses contained in this report were performed in accordance with the applicable certifications as noted. All soil samples are reported on a wet weight basis unless otherwise noted in the report. This Laboratory Report is confidential and is intended for the sole use of Del Mar Analytical and its client. This report shall not be reproduced, except in full, without written permission from Del Mar Analytical. The Chain(s) of Custody, 2 pages, are included and are an integral part of this report.

This entire report was reviewed and approved for release

SAMPLE CROSS REFERENCE

LABORATORY ID	CLIENT ID	MATRIX
IOC2148-01	PSZB-34-1	Soil
IOC2148-02	PSZB-34-2 1/2	Soil
IOC2148-03	PSZB-34-5	Soil
IOC2148-04	PSZB-34-7 1/2	Soil
IOC2148-05	PSZB-34-10	Soil
IOC2148-06	PSZB-34-15	Soil
IOC2148-07	PSZB-34-20	Soil
IOC2148-08	PSZB-34-25	Soil
IOC2148-09	PSZB-34-30	Soil
IOC2148-10	PSZB-35-1	Soil
IOC2148-11	PSZB-35-2 1/2	Soil
IOC2148-12	PSZB-35-5	Soil
IOC2148-13	PSZB-35-7 1/2	Soil
IOC2148-14	PSZB-35-10	Soil
IOC2148-15	PSZB-35-15	Soil
IOC2148-16	PSZB-35-20	Soil
IOC2148-17	PSZB-35-25	Soil
IOC2148-18	PSZB-35-30	Soil

Reviewed By:

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Geomatrix-Corona
250 East Rincon Street, Suite 204
Corona, CA 92879
Attention: Rick Rees

Project ID: Aerojet Azusa
007190.003.0
Report Number: IOC2148

Sampled: 03/28/05
Received: 03/28/05

INORGANICS

Analyte	Method	Batch	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IOC2148-01 (PSZB-34-1 - Soil)								
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	5C28099	0.040	ND	1	3/28/2005	3/28/2005	
Sample ID: IOC2148-02 (PSZB-34-2 1/2 - Soil)								
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	5C28099	0.20	1.6	5	3/28/2005	3/29/2005	
Sample ID: IOC2148-03 (PSZB-34-5 - Soil)								
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	5C28099	0.040	0.086	1	3/28/2005	3/29/2005	
Sample ID: IOC2148-04 (PSZB-34-7 1/2 - Soil)								
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	5C28099	0.040	0.056	1	3/28/2005	3/28/2005	
Sample ID: IOC2148-05 (PSZB-34-10 - Soil)								
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	5C28099	0.040	0.047	1	3/28/2005	3/28/2005	
Sample ID: IOC2148-06 (PSZB-34-15 - Soil)								
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	5C28099	0.040	0.12	1	3/28/2005	3/29/2005	
Sample ID: IOC2148-07 (PSZB-34-20 - Soil)								
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	5C28099	0.040	0.064	1	3/28/2005	3/29/2005	
Sample ID: IOC2148-08 (PSZB-34-25 - Soil)								
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	5C28099	0.040	0.046	1	3/28/2005	3/29/2005	
Sample ID: IOC2148-09 (PSZB-34-30 - Soil)								
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	5C28099	0.040	0.045	1	3/28/2005	3/29/2005	
Sample ID: IOC2148-10 (PSZB-35-1 - Soil)								
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	5C28099	0.040	ND	1	3/28/2005	3/29/2005	

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Project Manager

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Attention: Rick Rees

Project ID: Aerojet Azusa
007190.003.0
Report Number: IOC2148

Sampled: 03/28/05
Received: 03/28/05

INORGANICS

Analyte	Method	Batch	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IOC2148-11 (PSZB-35-2 1/2 - Soil)								
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD	5C28099	0.040	ND	1	3/28/2005	3/29/2005	
Sample ID: IOC2148-12 (PSZB-35-5 - Soil)								
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	5C28099	0.040	ND	1	3/28/2005	3/29/2005	
Sample ID: IOC2148-13 (PSZB-35-7 1/2 - Soil)								
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	5C28099	0.040	ND	1	3/28/2005	3/29/2005	
Sample ID: IOC2148-14 (PSZB-35-10 - Soil)								
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	5C28099	0.040	ND	1	3/28/2005	3/29/2005	
Sample ID: IOC2148-15 (PSZB-35-15 - Soil)								
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	5C28099	0.040	ND	1	3/28/2005	3/29/2005	
Sample ID: IOC2148-16 (PSZB-35-20 - Soil)								
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	5C28099	0.040	ND	1	3/28/2005	3/29/2005	
Sample ID: IOC2148-17 (PSZB-35-25 - Soil)								
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	5C28099	0.040	ND	1	3/28/2005	3/29/2005	
Sample ID: IOC2148-18 (PSZB-35-30 - Soil)								
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	5C28099	0.040	ND	1	3/28/2005	3/29/2005	

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Geomatrix-Corona
250 East Rincon Street, Suite 204
Corona, CA 92879
Attention: Rick Rees

Project ID: Aerojet Azusa
007190.003.0
Report Number: IOC2148

Sampled: 03/28/05
Received: 03/28/05

METHOD BLANK/QC DATA

INORGANICS

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 5C28099 Extracted: 03/28/05									
Blank Analyzed: 03/28/2005 (5C28099-BLK1)									
Perchlorate	ND	0.040	mg/kg						
LCS Analyzed: 03/28/2005 (5C28099-BS1)									
Perchlorate	0.547	0.040	mg/kg	0.500		109 85-115			
Matrix Spike Analyzed: 03/28/2005 (5C28099-MS1)									
Perchlorate	0.564	0.040	mg/kg	0.500	0.021	109 80-120			
Matrix Spike Dup Analyzed: 03/28/2005 (5C28099-MSD1)									
Perchlorate	0.565	0.040	mg/kg	0.500	0.021	109 80-120	0	20	

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Project ID: Aerojet Azusa
007190.003 0
Report Number: IOC2148

Sampled: 03/28/05
Received: 03/28/05

DATA QUALIFIERS AND DEFINITIONS

ND Analyte NOT DETECTED at or above the reporting limit or MDL, if MDL is specified.
RPD Relative Percent Difference

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Geomatrix-Corona
250 East Rincon Street, Suite 204
Corona, CA 92879
Attention: Rick Rees

Project ID: Aerojet Azusa
007190.003.0
Report Number: IOC2148

Sampled: 03/28/05
Received: 03/28/05

Certification Summary

Del Mar Analytical, Irvine

Method	Matrix	Nelac	California
EPA 314.0 MOD.	Soil	N/A	N/A


Nevada and NELAP provide analyte specific accreditations. Analyte specific information for Del Mar Analytical may be obtained by contacting the laboratory or visiting our website at www.dmalabs.com

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IOC2148 <Page 6 of 6>

#467

Chain-of-Custody Record			12107															Date: 3-28-05		Page 1 of 2	
Project No 7190.003			ANALYSES															REMARKS			
Samplers (Signatures)			Soil (S), Water (W), Vapor (V), or Other	EPA Method 8270	TPHg by 8015	TPHd by 8015	TPH	EPA 8260	EPA 8021	Title 22 Metals	Hold	PERMANENT EPA 314							Acidified	No. of containers	Additional Comments
Date	Time	Sample Number																			
3-28-05	0900	PS2B-34-1	S									X									IX 2148
3-28-05	0914	PS2B-34-2 1/2	S									X									
3-28-05	0917	PS2B-34-5	S									X									
3-28-05	0922	PS2B-34-7 1/2	S									X									
3-28-05	0927	PS2B-34-10	S									X									
3-28-05	0944	PS2B-34-15	S									X									
3-28-05	0950	PS2B-34-20	S									X									
3-28-05	1025	PS2B-34-25	S									X									
3-28-05	1030	PS2B-34-30	S									X									
3-28-05	1115	PS2B-35-1	S									X									
3-28-05	1122	PS2B-35-2 1/2	S									X									
3-28-05	1124	PS2B-35-5	S									X									
3-28-05	1126	PS2B-35-7 1/2	S									X									
3-28-05	1130	PS2B-35-10	S									X									
3-28-05	1138	PS2B-35-15	S									X									
Turnaround Time: 24 HR			Results To: Rick Rees & Paul Jeffers										Total No. of containers: 15								
Relinquished by (signature):		Date: 3-28-2005	Relinquished by (signature):		Date: 3/28/05	Relinquished by (signature):		Date:	Relinquished by (signature):		Date:	Method of shipment:									
Printed Name: Paul Jeffers		Time: 1430	Printed Name: GARY SCHLEPER		Time: 1610	Printed Name:		Time:	Printed Name:		Time:	LAB Courier Pick-up									
Company: Geomatrix			Company: DMAI			Company:			Company:			Laboratory comments and Log No.:									
Received (signature): Gary Schleper		Date: 3/28/05	Received (signature): Armando Herrera		Date: 3/28/05	Received (signature):		Date:	Received (signature):		Date:	 Geomatrix Consultants 250 E. Rincon, Suite 204 Corona, California 92879 (951) 273-7400									
Printed Name: Gary Schleper		Time: 1430	Printed Name: Armando Herrera		Time: 1610	Printed Name:		Time:	Printed Name:		Time:										
Company: DMAI			Company: DMAI			Company:			Company:												

INTACT 3"

[illegible]

INTACT 3c



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LABORATORY REPORT

Prepared For: Geomatrix-Corona
250 East Rincon Street, Suite 204
Corona, CA 92879
Attention: Rick Rees

Project: Aerojet Azusa
007190.003.0

Sampled: 03/29/05
Received: 03/29/05
Issued: 03/30/05 16:35

NELAP #01108CA California ELAP#1197 CSDLAC #10117

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This entire report was reviewed and approved for release*

SAMPLE CROSS REFERENCE

LABORATORY ID	CLIENT ID	MATRIX
IOC2257-01	PSZB-36-1	Soil
IOC2257-02	PSZB-36-2 1/2	Soil
IOC2257-03	PSZB-36-5	Soil
IOC2257-04	PSZB-36-7 1/2	Soil
IOC2257-05	PSZB-36-10	Soil
IOC2257-06	PSZB-36-15	Soil
IOC2257-07	PSZB-36-20	Soil
IOC2257-08	PSZB-36-25	Soil
IOC2257-09	PSZB-36-30	Soil
IOC2257-10	PSZB-37-1	Soil
IOC2257-11	PSZB-37-2 1/2	Soil
IOC2257-12	PSZB-37-5	Soil
IOC2257-13	PSZB-37-7 1/2	Soil
IOC2257-14	PSZB-37-10	Soil
IOC2257-15	PSZB-37-15	Soil
IOC2257-16	PSZB-37-20	Soil
IOC2257-17	PSZB-37-25	Soil
IOC2257-18	PSZB-37-30	Soil
IOC2257-19	PSZB-38-1	Soil
IOC2257-20	PSZB-38-2 1/2	Soil
IOC2257-21	PSZB-38-5	Soil
IOC2257-22	PSZB-38-7 1/2	Soil
IOC2257-23	PSZB-38-10	Soil

Del Mar Analytical, Irvine
Jim Hatfield
Project Manager



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Geomatrix-Corona
250 East Rincon Street, Suite 204
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Attention: Rick Rees

Project ID: Aerojet Azusa
007190.003.0
Report Number: IOC2257

Sampled: 03/29/05
Received: 03/29/05

LABORATORY ID	CLIENT ID	MATRIX
IOC2257-24	PSZB-38-15	Soil
IOC2257-25	PSZB-38-20	Soil
IOC2257-26	PSZB-38-25	Soil
IOC2257-27	PSZB-38-30	Soil
IOC2257-28	PSZB-25-1	Soil
IOC2257-29	PSZB-25-2 1/2	Soil
IOC2257-30	PSZB-25-5	Soil
IOC2257-31	PSZB-25-7 1/2	Soil
IOC2257-32	PSZB-25-10	Soil
IOC2257-33	PSZB-25-15	Soil
IOC2257-34	PSZB-25-20	Soil
IOC2257-35	PSZB-25-25	Soil
IOC2257-36	PSZB-25-30	Soil

Reviewed By:

Del Mar Analytical, Irvine
Jim Hatfield
Project Manager

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 Attention: Rick Rees

Project ID: Aerojet Azusa
 007190.003.0
 Report Number: IOC2257

Sampled: 03/29/05
 Received: 03/29/05

INORGANICS

Analyte	Method	Batch	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IOC2257-01 (PSZB-36-1 - Soil)								
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	5C29111	0.040	0.51	1	3/29/2005	3/29/2005	
Sample ID: IOC2257-02 (PSZB-36-2 1/2 - Soil)								
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	5C29111	4.0	38	100	3/29/2005	3/30/2005	
Sample ID: IOC2257-03 (PSZB-36-5 - Soil)								
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	5C29111	0.040	0.28	1	3/29/2005	3/30/2005	
Sample ID: IOC2257-04 (PSZB-36-7 1/2 - Soil)								
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	5C29111	0.40	2.1	10	3/29/2005	3/30/2005	
Sample ID: IOC2257-05 (PSZB-36-10 - Soil)								
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	5C29111	0.040	ND	1	3/29/2005	3/30/2005	
Sample ID: IOC2257-06 (PSZB-36-15 - Soil)								
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	5C29111	0.040	ND	1	3/29/2005	3/30/2005	
Sample ID: IOC2257-07 (PSZB-36-20 - Soil)								
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	5C29111	0.040	ND	1	3/29/2005	3/30/2005	
Sample ID: IOC2257-08 (PSZB-36-25 - Soil)								
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	5C29111	0.040	ND	1	3/29/2005	3/30/2005	
Sample ID: IOC2257-09 (PSZB-36-30 - Soil)								
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	5C29111	0.040	ND	1	3/29/2005	3/30/2005	
Sample ID: IOC2257-10 (PSZB-37-1 - Soil)								
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	5C29111	0.040	ND	1	3/29/2005	3/30/2005	

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 Corona, CA 92879
 Attention: Rick Rees

Project ID: Aerojet Azusa
 007190.003.0
 Report Number: IOC2257

Sampled: 03/29/05
 Received: 03/29/05

INORGANICS

Analyte	Method	Batch	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IOC2257-11 (PSZB-37-2 1/2 - Soil)								
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	5C29111	0.040	0.17	1	3/29/2005	3/30/2005	
Sample ID: IOC2257-12 (PSZB-37-5 - Soil)								
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	5C29111	0.040	0.044	1	3/29/2005	3/30/2005	
Sample ID: IOC2257-13 (PSZB-37-7 1/2 - Soil)								
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	5C29111	0.040	ND	1	3/29/2005	3/30/2005	
Sample ID: IOC2257-14 (PSZB-37-10 - Soil)								
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	5C29111	0.040	ND	1	3/29/2005	3/30/2005	
Sample ID: IOC2257-15 (PSZB-37-15 - Soil)								
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	5C29111	0.040	0.048	1	3/29/2005	3/30/2005	
Sample ID: IOC2257-16 (PSZB-37-20 - Soil)								
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	5C29111	0.040	ND	1	3/29/2005	3/30/2005	
Sample ID: IOC2257-17 (PSZB-37-25 - Soil)								
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	5C29111	0.040	ND	1	3/29/2005	3/30/2005	
Sample ID: IOC2257-18 (PSZB-37-30 - Soil)								
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	5C29111	0.040	ND	1	3/29/2005	3/30/2005	
Sample ID: IOC2257-19 (PSZB-38-1 - Soil)								
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	5C29113	0.040	ND	1	3/29/2005	3/30/2005	
Sample ID: IOC2257-20 (PSZB-38-2 1/2 - Soil)								
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	5C29111	0.040	0.093	1	3/29/2005	3/30/2005	

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IOC2257 <Page 4 of 10>



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Geomatrix-Corona
250 East Rincon Street, Suite 204
Corona, CA 92879
Attention: Rick Rees

Project ID: Aerojet Azusa
007190.003.0
Report Number: IOC2257

Sampled: 03/29/05
Received: 03/29/05

INORGANICS

Analyte	Method	Batch	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IOC2257-21 (PSZB-38-5 - Soil)								
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	5C29111	0.040	ND	1	3/29/2005	3/30/2005	
Sample ID: IOC2257-22 (PSZB-38-7 1/2 - Soil)								
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	5C29091	0.040	ND	1	3/29/2005	3/30/2005	
Sample ID: IOC2257-23 (PSZB-38-10 - Soil)								
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	5C29091	0.040	ND	1	3/29/2005	3/30/2005	
Sample ID: IOC2257-24 (PSZB-38-15 - Soil)								
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	5C29091	0.040	ND	1	3/29/2005	3/30/2005	
Sample ID: IOC2257-25 (PSZB-38-20 - Soil)								
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	5C29091	0.040	ND	1	3/29/2005	3/30/2005	
Sample ID: IOC2257-26 (PSZB-38-25 - Soil)								
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	5C29091	0.040	ND	1	3/29/2005	3/30/2005	
Sample ID: IOC2257-27 (PSZB-38-30 - Soil)								
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	5C29091	0.040	ND	1	3/29/2005	3/30/2005	
Sample ID: IOC2257-28 (PSZB-25-1 - Soil)								
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	5C29091	0.040	ND	1	3/29/2005	3/30/2005	
Sample ID: IOC2257-29 (PSZB-25-2 1/2 - Soil)								
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	5C29091	0.040	0.048	1	3/29/2005	3/30/2005	
Sample ID: IOC2257-30 (PSZB-25-5 - Soil)								
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	5C29113	0.040	ND	1	3/29/2005	3/30/2005	

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Project Manager

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Geomatrix-Corona
250 East Rincon Street, Suite 204
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Attention: Rick Rees

Project ID: Aerojet Azusa
007190 003.0
Report Number: IOC2257

Sampled: 03/29/05
Received: 03/29/05

INORGANICS

Analyte	Method	Batch	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IOC2257-31 (PSZB-25-7 1/2 - Soil)								
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	5C29113	0.040	ND	1	3/29/2005	3/30/2005	
Sample ID: IOC2257-32 (PSZB-25-10 - Soil)								
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	5C29113	0.040	ND	1	3/29/2005	3/30/2005	
Sample ID: IOC2257-33 (PSZB-25-15 - Soil)								
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	5C29113	0.040	ND	1	3/29/2005	3/30/2005	
Sample ID: IOC2257-34 (PSZB-25-20 - Soil)								
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	5C29113	0.040	ND	1	3/29/2005	3/30/2005	
Sample ID: IOC2257-35 (PSZB-25-25 - Soil)								
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	5C29113	0.040	ND	1	3/29/2005	3/30/2005	
Sample ID: IOC2257-36 (PSZB-25-30 - Soil)								
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	5C29113	0.040	ND	1	3/29/2005	3/30/2005	

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 Attention: Rick Rees

Project ID: Aerojet Azusa
 007190.003.0
 Report Number: IOC2257

Sampled: 03/29/05
 Received: 03/29/05

METHOD BLANK/QC DATA

INORGANICS

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 5C29091 Extracted: 03/29/05										
Blank Analyzed: 03/29/2005 (5C29091-BLK1)										
Perchlorate	ND	0.040	mg/kg							
LCS Analyzed: 03/29/2005 (5C29091-BS1)										
Perchlorate	0.511	0.040	mg/kg	0.500		102	85-115			
Matrix Spike Analyzed: 03/29/2005 (5C29091-MS1)										
Perchlorate	0.544	0.040	mg/kg	0.500	ND	109	80-120			
Matrix Spike Dup Analyzed: 03/29/2005 (5C29091-MSD1)										
Perchlorate	0.553	0.040	mg/kg	0.500	ND	111	80-120	2	20	
Batch: 5C29111 Extracted: 03/29/05										
Blank Analyzed: 03/29/2005 (5C29111-BLK1)										
Perchlorate	ND	0.040	mg/kg							
LCS Analyzed: 03/29/2005 (5C29111-BS1)										
Perchlorate	0.538	0.040	mg/kg	0.500		108	85-115			M-3
Batch: 5C29113 Extracted: 03/29/05										
Blank Analyzed: 03/30/2005 (5C29113-BLK1)										
Perchlorate	ND	0.040	mg/kg							
LCS Analyzed: 03/30/2005 (5C29113-BS1)										
Perchlorate	0.531	0.040	mg/kg	0.500		106	85-115			

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Attention: Rick Rees

Project ID: Aerojet Azusa
007190.003.0
Report Number: IOC2257

Sampled: 03/29/05
Received: 03/29/05

METHOD BLANK/QC DATA

INORGANICS

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 5C29113 Extracted: 03/29/05									
Matrix Spike Analyzed: 03/30/2005 (5C29113-MS1)					Source: IOC2257-19				
Perchlorate	0.549	0.040	mg/kg	0.500	0.015	107	80-120		
Matrix Spike Dup Analyzed: 03/30/2005 (5C29113-MSD1)					Source: IOC2257-19				
Perchlorate	0.542	0.040	mg/kg	0.500	0.015	105	80-120	1	20

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Attention: Rick Rees

Project ID: Aerojet Azusa
007190.003.0
Report Number: IOC2257

Sampled: 03/29/05
Received: 03/29/05

DATA QUALIFIERS AND DEFINITIONS

M-3 Results exceeded the linear range in the MS/MSD and therefore are not available for reporting. The batch was accepted based on acceptable recovery in the Blank Spike (LCS).
ND Analyte NOT DETECTED at or above the reporting limit or MDL, if MDL is specified.
RPD Relative Percent Difference

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Geomatrix-Corona
250 East Rincon Street, Suite 204
Corona, CA 92879
Attention: Rick Rees

Project ID: Aerojet Azusa
007190.003.0
Report Number: IOC2257

Sampled: 03/29/05
Received: 03/29/05

Certification Summary

Del Mar Analytical, Irvine

Method	Matrix	Nelac	California
EPA 314.0 MOD	Soil	N/A	N/A


Nevada and NELAP provide analyte specific accreditations. Analyte specific information for Del Mar Analytical may be obtained by contacting the laboratory or visiting our website at www.dmalabs.com

Del Mar Analytical, Irvine
Jim Hatfield
Project Manager

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IOC2257 <Page 10 of 10>

#431

Chain-of-Custody Record				12109										Date 3-29-05		Page 1 of 3	
Project No 7190-003			ANALYSES										REMARKS				
Samplers (Signatures) <i>Paul J</i>			Soil (S), Water (W), Vapor (V), or Other	EPA Method 8270	TPHg by 8015	TPHd by 8015	TPH	EPA 8260	EPA 8021	Title 22 Metals	Hold	PEACHSTONE EPA 314	Acidified	No. of containers	Additional Comments 402 jms		
Date	Time	Sample Number															
3-29-05	0858	PS2B-36-1	S									X	-	1			
3-29-05	0903	PS2B-36-2 1/2	S									X	-	1			
3-29-05	0906	PS2B-36-5	S									X	-	1			
3-29-05	0914	PS2B-36-7 1/2	S									X	-	1			
3-29-05	0924	PS2B-36-10	S									X	-	1			
3-29-05	0938	PS2B-36-15	S									X	-	1			
3-29-05	0945	PS2B-36-20	S									X	-	1			
3-29-05	1019	PS2B-36-25	S									X	-	1			
3-29-05	1026	PS2B-36-30	S									X	-	1			
3-29-05	1115	PS2B-37-1	S									X	-	1			
3-29-05	1123	PS2B-37-2 1/2	S									X	-	1			
3-29-05	1128	PS2B-37-5	S									X	-	1			
3-29-05	1130	PS2B-37-7 1/2	S									X	-	1			
3-29-05	1133	PS2B-37-10	S									X	-	1			
3-29-05	1147	PS2B-37-15	S									X	-	1			
Turnaround Time 24 Hour			Results To: Rick Reese, Paul Jeffers										Total No. of containers 15				
Relinquished by (signature) <i>Paul J</i>		Date 3-29-05	Relinquished by (signature): <i>Paul J</i>		Date 3-29-05	Relinquished by (signature):		Date	Method of shipment LAB COURIER Pick-up								
Printed Name PAUL JEFFERS		Time 1645	Printed Name: GARY SCHLESER		Time 1800	Printed Name:		Time	Laboratory comments and Log No								
Company GEOMATRIX			Company: DMAI			Company:											
Received (signature) <i>Gayle</i>		Date 3-29-05	Received (signature): <i>Gayle</i>		Date 3/29/05	Received (signature):		Date	 Geomatrix Consultants 250 E. Rincon, Suite 204 Corona, California 92879 (951) 273-7400								
Printed Name GARY SCHLESER		Time 1645	Printed Name: Sally Gunawan		Time 1800	Printed Name:		Time									
Company: DMAI			Company: DMAI			Company:											

502

IO02257

Chain-of-Custody Record				12110												Date: 3-29-05		Page 2 of 3					
Project No 7190.003			ANALYSES															REMARKS					
Samplers (Signatures)			Soil (S), Water (W), Vapor (V), or Other	EPA Method 8270	TPHg by 8015	TPHd by 8015	TPH	EPA 8260	EPA 8021	Title 22 Metals	-Hold	Pesticides EPA 314								Acidified	No of containers	Additional Comments	
Date	Time	Sample Number																					
3-29-05	1154	PS2B-37-20	S									X									-	1	
3-29-05	1205	PS2B-37-25	S									X									-	1	
3-29-05	1210	PS2B-37-30	S									X									-	1	
3-29-05	1257	PS2B-38-1	S									X									-	1	
3-29-05	1306	PS2B-38-2 1/2	S									X									-	1	
3-29-05	1310	PS2B-38-5	S									X									-	1	
3-29-05	1319	PS2B-38-7 1/2	S									X									-	1	
3-29-05	1335	PS2B-38-10	S									X									-	1	
3-29-05	1405	PS2B-38-15	S									X									-	1	
3-29-05	1411	PS2B-38-20	S									X									-	1	
3-29-05	1423	PS2B-38-25	S									X									-	1	
3-29-05	1429	PS2B-38-30	S									X									-	1	
3-29-05	1522	PS2B-25-1	S									X									-	1	
3-29-05	1530	PS2B-25-2 1/2	S									X									-	1	
3-29-05	1537	PS2B-25-5	S									X									-	1	
Turnaround Time			Results To:										Total No. of containers				15						
24 Hours			Rick Ross & Paul Jeffers																				
Relinquished by (signature):		Date:	Relinquished by (signature):		Date:	Relinquished by (signature):		Date:	Method of shipment														
Paul Jeffers		3-29-2005	[Signature]		3/29/05	[Signature]		3/29/05	LAB carrier Pick-up														
Printed Name:		Time	Printed Name:		Time	Printed Name:		Time	Laboratory comments and Log No.:														
Paul Jeffers		1645	GARY SCHIGGIA		1800	GARY SCHIGGIA		1800															
Company:			Company:			Company:																	
Geomatrix			DMAT			DMAT																	
Received (signature):		Date:	Received (signature):		Date:	Received (signature):		Date:															
[Signature]		3-29-05	[Signature]		3/29/05	[Signature]		3/29/05															
Printed Name:		Time	Printed Name:		Time	Printed Name:		Time															
GARY SCHIGGIA		1645	Stacy Gunkan		1800	Stacy Gunkan		1800															
Company:			Company:			Company:																	
DMAT			DMAT			DMAT																	
 Geomatrix Consultants 250 E. Rincon, Suite 204 Corona, California 92879 (951) 273-7400																							

Chain-of-Custody Record				12111										Date 3-29-05		Page 3 of 3					
Project No 7190.003				ANALYSES										REMARKS							
Samplers (Signatures) <div style="font-size: 2em; font-family: cursive;">Paul J</div>				Soil (S), Water (W), Vapor (V), or Other	EPA Method 8270	TPHg by 8015	TPHd by 8015	TPH	EPA 8260	EPA 8021	Title 22 Metals	Held	Pesticides EPA 314	Acidified	No of containers	Additional Comments					
Date	Time	Sample Number																			
3-29-05	1541	PS28-25-7 1/2	S										X	-	1						
3-29-05	1549	PS28-25-10	S										X	-	1						
3-29-05	1600	PS28-25-15	S										X	-	1						
3-29-05	1611	PS28-25-20	S										X	-	1						
3-29-05	1634	PS28-25-25	S										X	-	1						
3-29-05	1640	PS28-25-30	S										X	-	1						
Turnaround Time: 24 Hour				Results To: Rick Rees & Paul Jeffers								Total No. of containers		6							
Relinquished by (signature): <div style="font-size: 1.5em; font-family: cursive;">Paul J</div>		Date: 3-29-2005	Relinquished by (signature): <div style="font-size: 1.5em; font-family: cursive;">Gail Schlegel</div>		Date: 3-29-05	Relinquished by (signature):		Date: 3-29-05	Relinquished by (signature):		Method of shipment <div style="font-size: 1.2em; font-family: cursive;">LAG Courier Pick-up</div>										
Printed Name: PAUL JEFFERS		Time: 1645	Printed Name: GAIL SCHLEGEL		Time: 1800	Printed Name:		Printed Name:		Laboratory comments and Log No											
Company: GEOMATRIX			Company: DMAP			Company:		Company:													
Received (signature): <div style="font-size: 1.5em; font-family: cursive;">Gail Schlegel</div>		Date: 3-29-05	Received (signature): <div style="font-size: 1.5em; font-family: cursive;">Gail Schlegel</div>		Date: 3-29-05	Received (signature):		Date: 3-29-05	Received (signature):		Geomatrix Consultants 250 E. Rincon, Suite 204 Corona, California 92879 (951) 273-7400										
Printed Name: GAIL SCHLEGEL		Time: 1645	Printed Name: GAIL SCHLEGEL		Time: 1800	Printed Name:		Printed Name:													
Company: DMAP			Company: DMAP			Company:		Company:													



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LABORATORY REPORT

Prepared For: Geomatrix-Corona
250 East Rincon Street, Suite 204
Corona, CA 92879
Attention: Rick Rees

Project: Aerojet Azusa
007190.003.0

Sampled: 03/30/05
Received: 03/30/05
Issued: 03/31/05 18:01

NELAP #01108CA California ELAP#1197 CSDLAC #10117

The results listed within this Laboratory Report pertain only to the samples tested in the laboratory. The analyses contained in this report were performed in accordance with the applicable certifications as noted. All soil samples are reported on a wet weight basis unless otherwise noted in the report. This Laboratory Report is confidential and is intended for the sole use of Del Mar Analytical and its client. This report shall not be reproduced, except in full, without written permission from Del Mar Analytical. This entire report was reviewed and approved for release.

SAMPLE CROSS REFERENCE

LABORATORY ID	CLIENT ID	MATRIX
IOC2349-01	PSZB-26-1	Soil
IOC2349-02	PSZB-26-2 1/2	Soil
IOC2349-03	PSZB-26-5	Soil
IOC2349-04	PSZB-26-7 1/2	Soil
IOC2349-05	PSZB-26-10	Soil
IOC2349-06	PSZB-26-15	Soil
IOC2349-07	PSZB-26-20	Soil
IOC2349-08	PSZB-26-25	Soil
IOC2349-09	PSZB-43-1	Soil
IOC2349-10	PSZB-43-2 1/2	Soil
IOC2349-11	PSZB-43-5	Soil
IOC2349-12	PSZB-43-7 1/2	Soil
IOC2349-13	PSZB-43-10	Soil
IOC2349-14	PSZB-43-15	Soil
IOC2349-15	PSZB-43-20	Soil
IOC2349-16	PSZB-43-25	Soil
IOC2349-17	PSZB-43-30	Soil
IOC2349-18	PSZB-44-1	Soil
IOC2349-19	PSZB-44-2 1/2	Soil
IOC2349-20	PSZB-44-5	Soil
IOC2349-21	PSZB-44-7 1/2	Soil
IOC2349-22	PSZB-44-10	Soil
IOC2349-23	PSZB-44-15	Soil

Del Mar Analytical, Irvine
Chris Roberts For Jim Hatfield
Project Manager



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Geomatrix-Corona
250 East Rincon Street, Suite 204
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Attention: Rick Rees

Project ID: Aerojet Azusa
007190.003.0
Report Number: IOC2349

Sampled: 03/30/05
Received: 03/30/05

LABORATORY ID	CLIENT ID	MATRIX
IOC2349-24	PSZB-44-20	Soil
IOC2349-25	PSZB-44-25	Soil
IOC2349-26	PSZB-44-30	Soil
IOC2349-27	PSZB-49-1	Soil
IOC2349-28	PSZB-49-2 1/2	Soil
IOC2349-29	PSZB-49-5	Soil
IOC2349-30	PSZB-49-7 1/2	Soil
IOC2349-31	PSZB-49-10	Soil
IOC2349-32	PSZB-26-30	Soil
IOC2349-33	PSZB-49-15	Soil
IOC2349-34	PSZB-49-20	Soil
IOC2349-35	PSZB-49-25	Soil
IOC2349-36	PSZB-49-30	Soil

Reviewed By:

Del Mar Analytical, Irvine
Chris Roberts For Jim Hatfield
Project Manager

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IOC2349 <Page 2 of 9>



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Geomatrix-Corona
250 East Rincon Street, Suite 204
Corona, CA 92879
Attention: Rick Rees

Project ID: Aerojet Azusa
007190.003.0
Report Number: IOC2349

Sampled: 03/30/05
Received: 03/30/05

INORGANICS

Analyte	Method	Batch	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IOC2349-01 (PSZB-26-1 - Soil)								
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	5C30111	0.040	ND	1	3/30/2005	3/30/2005	
Sample ID: IOC2349-02 (PSZB-26-2 1/2 - Soil)								
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	5C30111	0.040	0.086	1	3/30/2005	3/30/2005	
Sample ID: IOC2349-03 (PSZB-26-5 - Soil)								
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	5C30111	0.040	ND	1	3/30/2005	3/30/2005	
Sample ID: IOC2349-04 (PSZB-26-7 1/2 - Soil)								
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	5C30111	0.040	0.050	1	3/30/2005	3/31/2005	
Sample ID: IOC2349-05 (PSZB-26-10 - Soil)								
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	5C30111	0.040	ND	1	3/30/2005	3/31/2005	
Sample ID: IOC2349-06 (PSZB-26-15 - Soil)								
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	5C30111	0.040	ND	1	3/30/2005	3/31/2005	
Sample ID: IOC2349-07 (PSZB-26-20 - Soil)								
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	5C30111	0.040	ND	1	3/30/2005	3/31/2005	
Sample ID: IOC2349-08 (PSZB-26-25 - Soil)								
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	5C30111	0.040	ND	1	3/30/2005	3/31/2005	
Sample ID: IOC2349-09 (PSZB-43-1 - Soil)								
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	5C30111	0.040	0.49	1	3/30/2005	3/31/2005	
Sample ID: IOC2349-10 (PSZB-43-2 1/2 - Soil)								
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	5C30111	0.040	0.14	1	3/30/2005	3/31/2005	

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Sampled: 03/30/05
 Received: 03/30/05

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Analyte	Method	Batch	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IOC2349-11 (PSZB-43-5 - Soil)								
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	5C30111	0.040	0.13	1	3/30/2005	3/31/2005	
Sample ID: IOC2349-12 (PSZB-43-7 1/2 - Soil)								
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	5C30111	0.040	ND	1	3/30/2005	3/31/2005	
Sample ID: IOC2349-13 (PSZB-43-10 - Soil)								
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	5C30111	0.040	0.058	1	3/30/2005	3/31/2005	
Sample ID: IOC2349-14 (PSZB-43-15 - Soil)								
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	5C30111	0.040	ND	1	3/30/2005	3/31/2005	
Sample ID: IOC2349-15 (PSZB-43-20 - Soil)								
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	5C30111	0.040	ND	1	3/30/2005	3/31/2005	
Sample ID: IOC2349-16 (PSZB-43-25 - Soil)								
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	5C30111	0.040	0.041	1	3/30/2005	3/31/2005	
Sample ID: IOC2349-17 (PSZB-43-30 - Soil)								
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	5C30111	0.040	0.040	1	3/30/2005	3/31/2005	
Sample ID: IOC2349-18 (PSZB-44-1 - Soil)								
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	5C30111	0.040	ND	1	3/30/2005	3/31/2005	
Sample ID: IOC2349-19 (PSZB-44-2 1/2 - Soil)								
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	5C30112	0.040	ND	1	3/30/2005	3/31/2005	
Sample ID: IOC2349-20 (PSZB-44-5 - Soil)								
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	5C30112	0.040	0.40	1	3/30/2005	3/31/2005	

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IOC2349 <Page 4 of 9>



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 Report Number: IOC2349

Sampled: 03/30/05
 Received: 03/30/05

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Analyte	Method	Batch	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IOC2349-21 (PSZB-44-7 1/2 - Soil)								
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	5C30112	0.040	0.13	1	3/30/2005	3/31/2005	
Sample ID: IOC2349-22 (PSZB-44-10 - Soil)								
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	5C30112	0.040	0.071	1	3/30/2005	3/31/2005	
Sample ID: IOC2349-23 (PSZB-44-15 - Soil)								
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	5C30112	0.040	0.052	1	3/30/2005	3/31/2005	
Sample ID: IOC2349-24 (PSZB-44-20 - Soil)								
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	5C30112	0.040	0.29	1	3/30/2005	3/31/2005	
Sample ID: IOC2349-25 (PSZB-44-25 - Soil)								
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	5C30112	0.040	0.39	1	3/30/2005	3/31/2005	
Sample ID: IOC2349-26 (PSZB-44-30 - Soil)								
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	5C30112	0.040	0.22	1	3/30/2005	3/31/2005	
Sample ID: IOC2349-27 (PSZB-49-1 - Soil)								
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	5C30112	0.040	0.071	1	3/30/2005	3/31/2005	
Sample ID: IOC2349-28 (PSZB-49-2 1/2 - Soil)								
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	5C30112	0.040	0.53	1	3/30/2005	3/31/2005	
Sample ID: IOC2349-29 (PSZB-49-5 - Soil)								
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	5C30112	2.0	16	50	3/30/2005	3/31/2005	
Sample ID: IOC2349-30 (PSZB-49-7 1/2 - Soil)								
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	5C30112	0.040	0.21	1	3/30/2005	3/31/2005	

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Project ID: Aerojet Azusa
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Report Number: IOC2349

Sampled: 03/30/05
Received: 03/30/05

INORGANICS

Analyte	Method	Batch	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IOC2349-31 (PSZB-49-10 - Soil)								
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	5C30112	0.040	0.11	1	3/30/2005	3/31/2005	
Sample ID: IOC2349-32 (PSZB-26-30 - Soil)								
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	5C30112	0.040	ND	1	3/30/2005	3/31/2005	
Sample ID: IOC2349-33 (PSZB-49-15 - Soil)								
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	5C30112	0.040	0.067	1	3/30/2005	3/31/2005	
Sample ID: IOC2349-34 (PSZB-49-20 - Soil)								
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	5C30112	0.040	ND	1	3/30/2005	3/31/2005	
Sample ID: IOC2349-35 (PSZB-49-25 - Soil)								
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	5C30112	0.040	ND	1	3/30/2005	3/31/2005	
Sample ID: IOC2349-36 (PSZB-49-30 - Soil)								
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	5C30112	0.040	ND	1	3/30/2005	3/31/2005	

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 007190.003.0
 Report Number: IOC2349

Sampled: 03/30/05
 Received: 03/30/05

METHOD BLANK/QC DATA

INORGANICS

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC %REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 5C30111 Extracted: 03/30/05									
Blank Analyzed: 03/30/2005 (5C30111-BLK1)									
Perchlorate	ND	0.040	mg/kg						
LCS Analyzed: 03/30/2005 (5C30111-BS1)									
Perchlorate	0.518	0.040	mg/kg	0.500		104 85-115			
Matrix Spike Analyzed: 03/30/2005 (5C30111-MS1)									
Perchlorate	0.522	0.040	mg/kg	0.500	ND	104 80-120			
Matrix Spike Dup Analyzed: 03/30/2005 (5C30111-MSD1)									
Perchlorate	0.542	0.040	mg/kg	0.500	ND	108 80-120	4	20	
Batch: 5C30112 Extracted: 03/30/05									
Blank Analyzed: 03/31/2005 (5C30112-BLK1)									
Perchlorate	ND	0.040	mg/kg						
LCS Analyzed: 03/31/2005 (5C30112-BS1)									
Perchlorate	0.516	0.040	mg/kg	0.500		103 85-115			
Matrix Spike Analyzed: 03/31/2005 (5C30112-MS1)									
Perchlorate	0.550	0.040	mg/kg	0.500	ND	110 80-120			
Matrix Spike Dup Analyzed: 03/31/2005 (5C30112-MSD1)									
Perchlorate	0.559	0.040	mg/kg	0.500	ND	112 80-120	2	20	

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Sampled: 03/30/05
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DATA QUALIFIERS AND DEFINITIONS

ND Analyte NOT DETECTED at or above the reporting limit or MDL, if MDL is specified
RPD Relative Percent Difference

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Certification Summary

Del Mar Analytical, Irvine

Method	Matrix	Nelac	California
EPA 314.0 MOD.	Soil	N/A	N/A

Nevada and NELAP provide analyte specific accreditations. Analyte specific information for Del Mar Analytical may be obtained by contacting the laboratory or visiting our website at www.dmalabs.com

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LABORATORY REPORT

Prepared For: Geomatrix-Corona
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Corona, CA 92879
Attention: Rick Rees

Project: Aerojet Azusa
007190.003.0

Sampled: 03/30/05
Received: 03/31/05
Issued: 04/07/05 17:47

NELAP #01108CA California ELAP#1197 CSDLAC #10117

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This entire report was reviewed and approved for release.

SAMPLE CROSS REFERENCE

LABORATORY ID	CLIENT ID	MATRIX
IOC2468-03	PSZB-46-1	Soil
IOC2468-04	PSZB-46-2 1/2	Soil
IOC2468-05	PSZB-46-5	Soil
IOC2468-06	PSZB-46-7 1/2	Soil
IOC2468-07	PSZB-46-10	Soil
IOC2468-08	PSZB-46-15	Soil
IOC2468-09	PSZB-46-20	Soil
IOC2468-10	PSZB-46-25	Soil
IOC2468-11	PSZB-46-30	Soil
IOC2468-12	PSZB-42-1	Soil
IOC2468-13	PSZB-42-2 1/2	Soil
IOC2468-14	PSZB-42-5	Soil
IOC2468-15	PSZB-42-7 1/2	Soil
IOC2468-16	PSZB-42-10	Soil
IOC2468-17	PSZB-42-15	Soil
IOC2468-18	PSZB-42-20	Soil
IOC2468-19	PSZB-42-25	Soil
IOC2468-20	PSZB-42-30	Soil

Reviewed By:

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Project Manager



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Project ID: Aerojet Azusa
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Report Number: IOC2468

Sampled: 03/30/05
Received: 03/31/05

INORGANICS

Analyte	Method	Batch	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IOC2468-03 (PSZB-46-1 - Soil)								
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	5D01077	0.040	ND	1	4/1/2005	4/2/2005	
Sample ID: IOC2468-04 (PSZB-46-2 1/2 - Soil)								
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	5D01077	0.040	ND	1	4/1/2005	4/1/2005	
Sample ID: IOC2468-05 (PSZB-46-5 - Soil)								
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	5D01077	0.040	0.73	1	4/1/2005	4/1/2005	
Sample ID: IOC2468-06 (PSZB-46-7 1/2 - Soil)								
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	5D01077	0.040	0.33	1	4/1/2005	4/1/2005	
Sample ID: IOC2468-07 (PSZB-46-10 - Soil)								
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	5D01077	0.040	0.47	1	4/1/2005	4/1/2005	
Sample ID: IOC2468-08 (PSZB-46-15 - Soil)								
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	5D01077	0.20	1.8	5	4/1/2005	4/2/2005	
Sample ID: IOC2468-09 (PSZB-46-20 - Soil)								
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	5D01077	0.40	3.7	10	4/1/2005	4/2/2005	
Sample ID: IOC2468-10 (PSZB-46-25 - Soil)								
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	5D01077	0.040	0.16	1	4/1/2005	4/1/2005	
Sample ID: IOC2468-11 (PSZB-46-30 - Soil)								
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	5D01077	0.040	0.050	1	4/1/2005	4/1/2005	
Sample ID: IOC2468-12 (PSZB-42-1 - Soil)								
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	5D01077	0.080	0.99	2	4/1/2005	4/2/2005	

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2520 E. Sunset Rd. #3, Las Vegas, NV 89120 (702) 798-3620 FAX (702) 798-3621

Geomatrix-Corona
250 East Rincon Street, Suite 204
Corona, CA 92879
Attention: Rick Rees

Project ID: Aerojet Azusa
007190.003.0
Report Number: IOC2468

Sampled: 03/30/05
Received: 03/31/05

INORGANICS

Analyte	Method	Batch	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IOC2468-13 (PSZB-42-2 1/2 - Soil)								
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	5D01077	0.040	ND	1	4/1/2005	4/1/2005	
Sample ID: IOC2468-14 (PSZB-42-5 - Soil)								
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	5D01077	0.040	ND	1	4/1/2005	4/1/2005	
Sample ID: IOC2468-15 (PSZB-42-7 1/2 - Soil)								
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	5D01077	0.040	ND	1	4/1/2005	4/1/2005	
Sample ID: IOC2468-16 (PSZB-42-10 - Soil)								
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	5D01077	0.040	ND	1	4/1/2005	4/1/2005	
Sample ID: IOC2468-17 (PSZB-42-15 - Soil)								
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	5D01077	0.040	ND	1	4/1/2005	4/1/2005	
Sample ID: IOC2468-18 (PSZB-42-20 - Soil)								
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	5D01077	0.040	ND	1	4/1/2005	4/1/2005	
Sample ID: IOC2468-19 (PSZB-42-25 - Soil)								
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	5D01077	0.040	ND	1	4/1/2005	4/2/2005	
Sample ID: IOC2468-20 (PSZB-42-30 - Soil)								
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	5D01077	0.040	ND	1	4/1/2005	4/2/2005	

Del Mar Analytical, Irvine
Jim Hatfield
Project Manager

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IOC2468 <Page 3 of 6>



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Geomatrix-Corona
250 East Rincon Street, Suite 204
Corona, CA 92879
Attention: Rick Rees

Project ID: Aerojet Azusa
007190.003.0
Report Number: IOC2468

Sampled: 03/30/05
Received: 03/31/05

METHOD BLANK/QC DATA

INORGANICS

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 5D01077 Extracted: 04/01/05									
Blank Analyzed: 04/01/2005 (5D01077-BLK1)									
Perchlorate	ND	0.040	mg/kg						
LCS Analyzed: 04/01/2005 (5D01077-BS1)									
Perchlorate	0.547	0.040	mg/kg	0.500		109 85-115			
Matrix Spike Analyzed: 04/01/2005 (5D01077-MS1)									
Perchlorate	0.574	0.040	mg/kg	0.500	ND	115 80-120			
Matrix Spike Dup Analyzed: 04/01/2005 (5D01077-MSD1)									
Perchlorate	0.581	0.040	mg/kg	0.500	ND	116 80-120	1	20	

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IOC2468 <Page 4 of 6>



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Project ID: Aerojet Azusa
007190.003.0
Report Number: IOC2468

Sampled: 03/30/05
Received: 03/31/05

DATA QUALIFIERS AND DEFINITIONS

ND Analyte NOT DETECTED at or above the reporting limit or MDL, if MDL is specified.
RPD Relative Percent Difference

Del Mar Analytical, Irvine
Jim Hatfield
Project Manager

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Geomatrix-Corona
250 East Rincon Street, Suite 204
Corona, CA 92879
Attention: Rick Rees

Project ID: Aerojet Azusa
007190.003.0
Report Number: IOC2468

Sampled: 03/30/05
Received: 03/31/05

Certification Summary

Del Mar Analytical, Irvine

Method	Matrix	Nelac	California
EPA 314.0 MOD.	Soil	N/A	N/A



Nevada and NELAP provide analyte specific accreditations. Analyte specific information for Del Mar Analytical may be obtained by contacting the laboratory or visiting our website at www.dmalabs.com.

Del Mar Analytical, Irvine
Jim Hatfield
Project Manager

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IOC2468 <Page 6 of 6>

#414

Chain-of-Custody Record			12115															Date 3-30-05 → 3-31-05		Page 1 of 2	
Project No: 7190.003			ANALYSES															REMARKS			
Samplers (Signatures): Paul Jeffers			Soil (S), Water (W) Vapor (V), or Other	EPA Method 8270	TPHg by 8015	TPHg by 8015	TPH	EPA 8260	EPA 8021	Title 22 Metals	Hold	PERCULORATE EPA 514							Acidified	No of containers	Additional Comments
Date	Time	Sample Number																			
3-30-05	1640	PS2B-49-35	S								X								-	1	IOC 2468 LIMITED SAMPLE VOLUME LIMITED SAMPLE VOLUME
3-30-05	1653	PS2B-49-40	S								X								-	1	
3-31-05	1256	PS2B-46-1	S								X								-	1	
3-31-05	1301	PS2B-46-2 1/2	S								X								-	1	
3-31-05	1303	PS2B-46-5	S								X								-	1	
3-31-05	1313	PS2B-46-7 1/2	S								X								-	1	
3-31-05	1322	PS2B-46-10	S								X								-	1	
3-31-05	1337	PS2B-46-15	S								X								-	1	
3-31-05	1344	PS2B-46-20	S								X								-	1	
3-31-05	1358	PS2B-46-25	S								X								-	1	
3-31-05	1405	PS2B-46-30	S								X								-	1	
3-31-05	1445	PS2B-42-1	S								X								-	1	
3-31-05	1452	PS2B-42-2 1/2	S								X								-	1	
3-31-05	1502	PS2B-42-5	S								X								-	1	
3-31-05	1506	PS2B-42-7 1/2	S								X								-	1	
Turnaround Time: 24 Hour Sclay			Results To: Rick Rees and Paul Jeffers										Total No. of containers: 15								
Relinquished by (signature): Paul Jeffers		Date: 3-31-2005	Relinquished by (signature): Gary Schlegel		Date: 3-31-05	Relinquished by (signature):		Date:	Method of shipment: LAB COVERED Pick-up												
Printed Name: PAUL JEFFERS		Time: 1550	Printed Name: GARY SCHLEGEL		Time: 1720	Printed Name:		Time:	Laboratory comments and Log No												
Company: GEOMATRIX			Company: DMAT			Company:															
Received (signature): Armando Herrera		Date: 3-31-05	Received (signature): Armando Herrera		Date: 3-31-05	Received (signature):		Date:													
Printed Name: GARY SCHLEGEL		Time: 1550	Printed Name: Armando Herrera		Time: 1720	Printed Name:		Time:	Geomatrix Consultants 250 E. Rincon, Suite 204 Corona, California 92879 (951) 273-7400												
Company: DMAT			Company: DMAT			Company:															

INTACT 2C

[illegible]

INTACT 2^o



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LABORATORY REPORT

Prepared For: Geomatrix-Corona
250 East Rincon Street, Suite 204
Corona, CA 92879
Attention: Rick Rees

Project: Aerojet Azusa
007190.003.0

Sampled: 04/01/05
Received: 04/01/05
Issued: 04/12/05 09:48

NELAP #01108CA California ELAP#1197 CSDLAC #10117

The results listed within this Laboratory Report pertain only to the samples tested in the laboratory. The analyses contained in this report were performed in accordance with the applicable certifications as noted. All soil samples are reported on a wet weight basis unless otherwise noted in the report. This Laboratory Report is confidential and is intended for the sole use of Del Mar Analytical and its client. This report shall not be reproduced, except in full, without written permission from Del Mar Analytical. This entire report was reviewed and approved for release.

SAMPLE CROSS REFERENCE

LABORATORY ID	CLIENT ID	MATRIX
IOD0085-01	PSZB-41-1	Soil
IOD0085-02	PSZB-41-2 1/2	Soil
IOD0085-03	PSZB-41-5	Soil
IOD0085-04	PSZB-41-7 1/2	Soil
IOD0085-05	PSZB-41-10	Soil
IOD0085-06	PSZB-41-15	Soil
IOD0085-07	PSZB-41-20	Soil
IOD0085-08	PSZB-41-25	Soil
IOD0085-09	PSZB-41-30	Soil
IOD0085-10	PSZB-47-1	Soil
IOD0085-11	PSZB-47-2 1/2	Soil
IOD0085-12	PSZB-47-5	Soil
IOD0085-13	PSZB-47-7 1/2	Soil
IOD0085-14	PSZB-47-10	Soil
IOD0085-15	PSZB-47-15	Soil
IOD0085-16	PSZB-47-20	Soil
IOD0085-17	PSZB-47-25	Soil
IOD0085-18	PSZB-47-30	Soil

Reviewed By:

Del Mar Analytical, Irvine
Jim Hatfield
Project Manager



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2520 E Sunset Rd. #3, Las Vegas, NV 89120 (702) 798-3620 FAX (702) 798-3621

Geomatrix-Corona
250 East Rincon Street, Suite 204
Corona, CA 92879
Attention: Rick Rees

Project ID: Aerojet Azusa
007190.003.0
Report Number: IOD0085

Sampled: 04/01/05
Received: 04/01/05

INORGANICS

Analyte	Method	Batch	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IOD0085-01 (PSZB-41-1 - Soil)				Sampled: 04/01/05				
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	5D02045	0.040	ND	1	4/2/2005	4/4/2005	
Sample ID: IOD0085-02 (PSZB-41-2 1/2 - Soil)				Sampled: 04/01/05				
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	5D02045	0.040	ND	1	4/2/2005	4/4/2005	
Sample ID: IOD0085-03 (PSZB-41-5 - Soil)				Sampled: 04/01/05				
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	5D02045	0.040	ND	1	4/2/2005	4/4/2005	
Sample ID: IOD0085-04 (PSZB-41-7 1/2 - Soil)				Sampled: 04/01/05				
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	5D02045	0.040	ND	1	4/2/2005	4/5/2005	
Sample ID: IOD0085-05 (PSZB-41-10 - Soil)				Sampled: 04/01/05				
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	5D02045	0.040	ND	1	4/2/2005	4/4/2005	
Sample ID: IOD0085-06 (PSZB-41-15 - Soil)				Sampled: 04/01/05				
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	5D02045	0.040	ND	1	4/2/2005	4/4/2005	
Sample ID: IOD0085-07 (PSZB-41-20 - Soil)				Sampled: 04/01/05				
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	5D02045	0.040	ND	1	4/2/2005	4/4/2005	
Sample ID: IOD0085-08 (PSZB-41-25 - Soil)				Sampled: 04/01/05				
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	5D02045	0.040	ND	1	4/2/2005	4/4/2005	
Sample ID: IOD0085-09 (PSZB-41-30 - Soil)				Sampled: 04/01/05				
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	5D02045	0.040	ND	1	4/2/2005	4/5/2005	
Sample ID: IOD0085-10 (PSZB-47-1 - Soil)				Sampled: 04/01/05				
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	5D02045	0.080	1.1	2	4/2/2005	4/5/2005	

Del Mar Analytical, Irvine
Jim Hatfield
Project Manager

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IOD0085 <Page 2 of 6>



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Geomatrix-Corona
250 East Rincon Street, Suite 204
Corona, CA 92879
Attention: Rick Rees

Project ID: Aerojet Azusa
007190.003.0
Report Number: IOD0085

Sampled: 04/01/05
Received: 04/01/05

INORGANICS

Analyte	Method	Batch	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IOD0085-11 (PSZB-47-2 1/2 - Soil)				Sampled: 04/01/05				
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	5D02045	0.20	1.8	5	4/2/2005	4/5/2005	
Sample ID: IOD0085-12 (PSZB-47-5 - Soil)				Sampled: 04/01/05				
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	5D02045	0.20	1.5	5	4/2/2005	4/5/2005	
Sample ID: IOD0085-13 (PSZB-47-7 1/2 - Soil)				Sampled: 04/01/05				
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	5D02045	0.040	0.26	1	4/2/2005	4/5/2005	
Sample ID: IOD0085-14 (PSZB-47-10 - Soil)				Sampled: 04/01/05				
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	5D02045	0.040	0.33	1	4/2/2005	4/5/2005	
Sample ID: IOD0085-15 (PSZB-47-15 - Soil)				Sampled: 04/01/05				
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	5D02045	0.040	0.18	1	4/2/2005	4/5/2005	
Sample ID: IOD0085-16 (PSZB-47-20 - Soil)				Sampled: 04/01/05				
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	5D02045	0.040	0.12	1	4/2/2005	4/5/2005	
Sample ID: IOD0085-17 (PSZB-47-25 - Soil)				Sampled: 04/01/05				
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	5D02045	0.040	0.43	1	4/2/2005	4/5/2005	
Sample ID: IOD0085-18 (PSZB-47-30 - Soil)				Sampled: 04/01/05				
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	5D02045	0.040	0.24	1	4/2/2005	4/5/2005	

Del Mar Analytical, Irvine
Jim Hatfield
Project Manager

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Geomatrix-Corona
250 East Rincon Street, Suite 204
Corona, CA 92879
Attention: Rick Rees

Project ID: Aerojet Azusa
007190.003.0
Report Number: IOD0085

Sampled: 04/01/05
Received: 04/01/05

METHOD BLANK/QC DATA

INORGANICS

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 5D02045 Extracted: 04/02/05										
Blank Analyzed: 04/04/2005 (5D02045-BLK1)										
Perchlorate	ND	0.040	mg/kg							
LCS Analyzed: 04/04/2005 (5D02045-BS1)										
Perchlorate	0.498	0.040	mg/kg	0.500		100	85-115			
Matrix Spike Analyzed: 04/04/2005 (5D02045-MS1)										
Perchlorate	0.510	0.040	mg/kg	0.500	ND	102	80-120			
Matrix Spike Dup Analyzed: 04/04/2005 (5D02045-MSD1)										
Perchlorate	0.529	0.040	mg/kg	0.500	ND	106	80-120	4	20	

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Corona, CA 92879
Attention: Rick Rees

Project ID: Aerojet Azusa
007190.003.0
Report Number: IOD0085

Sampled: 04/01/05
Received: 04/01/05

DATA QUALIFIERS AND DEFINITIONS

ND Analyte NOT DETECTED at or above the reporting limit or MDL, if MDL is specified.
RPD Relative Percent Difference

ADDITIONAL COMMENTS

For GRO (C4-C12):

GRO (C4-C12) is quantitated against a gasoline standard. Quantitation begins immediately following the methanol peak.

For Extractable Fuel Hydrocarbons (EFH, DRO, ORO) :

Unless otherwise noted, Extractable Fuel Hydrocarbons (EFH, DRO, ORO) are quantitated against a Diesel Fuel Standard.

Del Mar Analytical, Irvine
Jim Hatfield
Project Manager

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Geomatrix-Corona
250 East Rincon Street, Suite 204
Corona, CA 92879
Attention: Rick Rees

Project ID: Aerojet Azusa
007190.003.0
Report Number: IOD0085

Sampled: 04/01/05
Received: 04/01/05

Certification Summary

Del Mar Analytical, Irvine

Method	Matrix	Nelac	California
EPA 314.0 MOD.	Soil	N/A	N/A

Nevada and NELAP provide analyte specific accreditations. Analyte specific information for Del Mar Analytical may be obtained by contacting the laboratory or visiting our website at www.dmalabs.com

Del Mar Analytical, Irvine
Jim Hatfield
Project Manager

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IOD0085 <Page 6 of 6>

FEBRUARY AND MARCH 2006 SAMPLING



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LABORATORY REPORT

Prepared For: Geomatrix-Corona
250 East Rincon Street, Suite 204
Corona, CA 92879
Attention: Rick Rees

Project: Aerojet Azusa
007190.004.17

Sampled: 02/07/06
Received: 02/07/06
Issued: 02/20/06 12:04

NELAP #01108CA California ELAP#1197 CSDLAC #10117

The results listed within this Laboratory Report pertain only to the samples tested in the laboratory. The analyses contained in this report were performed in accordance with the applicable certifications as noted. All soil samples are reported on a wet weight basis unless otherwise noted in the report. This Laboratory Report is confidential and is intended for the sole use of Del Mar Analytical and its client. This report shall not be reproduced, except in full, without written permission from Del Mar Analytical. The Chain of Custody, 1 page, is included and is an integral part of this report.

This entire report was reviewed and approved for release.

CASE NARRATIVE

SAMPLE RECEIPT: Samples were received intact, at 5°C, on ice and with chain of custody documentation.

HOLDING TIMES: All samples were analyzed within prescribed holding times and/or in accordance with the Del Mar Analytical Sample Acceptance Policy unless otherwise noted in the report.

PRESERVATION: Samples requiring preservation were verified prior to sample analysis.

QA/QC CRITERIA: All analyses met method criteria, except as noted in the report with data qualifiers.

COMMENTS: Perchlorate result of water sample IPB0657-01 is included in this report. All other results were sent under separate cover.

SUBCONTRACTED: No analyses were subcontracted to an outside laboratory.

LABORATORY ID
IPB0657-01

CLIENT ID
20060207EQB

MATRIX
Water

Reviewed By:

Del Mar Analytical, Irvine
Patty Mata
Project Manager



Del Mar Analytical

17461 Derian Ave., Suite 100, Irvine, CA 92614 (949) 261-1022 FAX (949) 260-3297
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2520 E. Sunset Rd. #3, Las Vegas, NV 89120 (702) 798-3620 FAX (702) 798-3621

Geomatrix-Corona
250 East Rincon Street, Suite 204
Corona, CA 92879
Attention: Rick Rees

Project ID: Aerojet Azusa
007190.004.17
Report Number: IPB0657

Sampled. 02/07/06
Received. 02/07/06

INORGANICS

Analyte	Method	Batch	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IPB0657-01 (20060207EQB - Water)								
Reporting Units: ug/l								
Perchlorate	EPA 314.0	6B09066	3.0	ND	1	2/9/2006	2/10/2006	

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Patty Mata
Project Manager

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IPB0657 <Page 2 of 5>



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Attention: Rick Rees

Project ID: Aerojet Azusa
007190.004.17
Report Number: IPB0657

Sampled: 02/07/06
Received: 02/07/06

METHOD BLANK/QC DATA

INORGANICS

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 6B09066 Extracted: 02/09/06									
Blank Analyzed: 02/09/2006 (6B09066-BLK1)									
Perchlorate	ND	3.0	ug/l						
LCS Analyzed: 02/09/2006 (6B09066-BS1)									
Perchlorate	47.3	3.0	ug/l	50.0		95 85-115			
Matrix Spike Analyzed: 02/09/2006 (6B09066-MS1)									
Perchlorate	52.0	3.0	ug/l	50.0	2.2	100 80-120			
Matrix Spike Dup Analyzed: 02/09/2006 (6B09066-MSD1)									
Perchlorate	52.3	3.0	ug/l	50.0	2.2	100 80-120	1	20	

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IPB0657 <Page 3 of 5>



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Geomatrix-Corona
250 East Rincon Street, Suite 204
Corona, CA 92879
Attention: Rick Rees

Project ID: Aerojet Azusa
007190.004.17
Report Number: IPB0657

Sampled: 02/07/06
Received: 02/07/06

DATA QUALIFIERS AND DEFINITIONS

ND Analyte NOT DETECTED at or above the reporting limit or MDL, if MDL is specified.
RPD Relative Percent Difference

Del Mar Analytical, Irvine
Patty Mata
Project Manager

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250 East Rincon Street, Suite 204
Corona, CA 92879
Attention: Rick Rees

Project ID: Aerojet Azusa
007190.004.17
Report Number: IPB0657

Sampled: 02/07/06
Received: 02/07/06

Certification Summary

Del Mar Analytical, Irvine

Method	Matrix	Nelac	California
EPA 314.0	Water	N/A	X

Nevada and NELAP provide analyte specific accreditations. Analyte specific information for Del Mar Analytical may be obtained by contacting the laboratory or visiting our website at www.dmalabs.com.

Del Mar Analytical, Irvine
Patty Mata
Project Manager

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IPB0657 <Page 5 of 5>

COR. 10104

PROJECT NAME			LABORATORY NAME		CLIENT INFORMATION		DATE		PAGE		OF	
PROJECT NUMBER			LABORATORY ADDRESS		REPORTING REQUIREMENTS		IPB0657					
RESULTS TO			TURNAROUND TIME		SAMPLE SHIPMENT METHOD		GEOTRACKER REQUIRED		YES		NO	
SAMPLERS (SIGNATURE):			ANALYSES		CONTAINER TYPE AND SIZE		Soil (S), Water (W), Vapor (V), or Other (O)		Preservative Type		Cooling	
DATE			TIME		SAMPLE NUMBER		EPA 314		5-DAY TURNAROUND		MS/MSD	
2/7/06			9:33		20060107EQB		X				PLASTIC 470ML	
2/7/06			9:59		PIZB-04-01		X				GLASS 4 OZ	
2/7/06			10:57		PIZB-04-242-25		X				"	
2/7/06			11:11		PIZB-04-5		X				"	
2/7/06			11:17		PIZB-04-7.5		X				"	
2/7/06			11:30		PIZB-04-16		X				"	
2/7/06			11:40		PIZB-04-15		X				"	
2/7/06			11:49		PIZB-04-20		X				"	
2/7/06			12:01		PIZB-04-25		X				"	
2/7/06			12:13		PIZB-04-30		X				"	
2/7/06			12:17		PIZB-04-35		X				"	
2/7/06			13:04		PIZB-04-40		X X				"	
2/7/06			13:28		PIZB-04-45		X X				"	
2/7/06			14:03		PIZB-04-50		X X				"	
2/7/06			16:28		PSZB-60-1		X				"	
RELINQUISHED BY:			DATE		TIME		RECEIVED BY:		DATE		TIME	
SIGNATURE:			2/7/06		16:41		SIGNATURE:		2/7/06		1641	
PRINTED NAME:							PRINTED NAME:					
COMPANY:							COMPANY:					
SIGNATURE:			2/7/06		1840		SIGNATURE:		2/7/06		1840	
PRINTED NAME:							PRINTED NAME:					
COMPANY:							COMPANY:					
SIGNATURE:							SIGNATURE:					
PRINTED NAME:							PRINTED NAME:					
COMPANY:							COMPANY:					
TOTAL NUMBER OF CONTAINERS:			15				SAMPLING COMMENTS:		injection 50			
250 East Rincon Street, Suite 204							Corona, California 92879-1363					
Tel 951.273.7400 Fax 951.273.7420							Geomatrix					



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2520 E. Sunset Rd. #3, Las Vegas, NV 89120 (702) 798-3620 FAX (702) 798-3621

LABORATORY REPORT

Prepared For: Geomatrix-Corona
250 East Rincon Street, Suite 204
Corona, CA 92879
Attention: Rick Rees

Project: Aerojet Azusa
007190.004.17

Sampled: 02/07/06
Received: 02/07/06
Issued: 02/14/06 17:17

NELAP #01108CA California ELAP#1197 CSDLAC #10117

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This entire report was reviewed and approved for release.*

CASE NARRATIVE

SAMPLE RECEIPT: Samples were received intact, at 5°C, on ice and with chain of custody documentation.

HOLDING TIMES: All samples were analyzed within prescribed holding times and/or in accordance with the Del Mar Analytical Sample Acceptance Policy unless otherwise noted in the report.

PRESERVATION: Samples requiring preservation were verified prior to sample analysis.

QA/QC CRITERIA: All analyses met method criteria, except as noted in the report with data qualifiers.

COMMENTS: Perchlorate result of water sample IPB0657-01 was not yet available for reporting and will be sent under separate cover. Report revised 2/14/06 to correct sample ID for lab number IPB0657-15.

SUBCONTRACTED: No analyses were subcontracted to an outside laboratory.

LABORATORY ID	CLIENT ID	MATRIX
IPB0657-02	PIZB-04-01	Soil
IPB0657-03	PIZB-04-2.5	Soil
IPB0657-04	PIZB-04-5	Soil
IPB0657-05	PIZB-04-7.5	Soil
IPB0657-06	PIZB-04-10	Soil
IPB0657-07	PIZB-04-15	Soil
IPB0657-08	PIZB-04-20	Soil
IPB0657-09	PIZB-04-25	Soil
IPB0657-10	PIZB-04-30	Soil

Del Mar Analytical, Irvine
Patty Mata
Project Manager



Del Mar Analytical

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Geomatrix-Corona
250 East Rincon Street, Suite 204
Corona, CA 92879
Attention: Rick Rees

Project ID: Aerojet Azusa
007190.004.17
Report Number: IPB0657

Sampled: 02/07/06
Received: 02/07/06

LABORATORY ID	CLIENT ID	MATRIX
IPB0657-11	PIZB-04-35	Soil
IPB0657-12	PIZB-04-40	Soil
IPB0657-13	PIZB-04-45	Soil
IPB0657-14	PIZB-04-50	Soil
IPB0657-15	PSZB-60-1	Soil

Reviewed By:

Del Mar Analytical, Irvine
Patty Mata
Project Manager

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IPB0657 <Page 2 of 7>



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Geomatrix-Corona
250 East Rincon Street, Suite 204
Corona, CA 92879
Attention: Rick Rees

Project ID: Aerojet Azusa
007190.004.17
Report Number: IPB0657

Sampled: 02/07/06
Received: 02/07/06

INORGANICS

Analyte	Method	Batch	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IPB0657-02 (PIZB-04-01 - Soil)				Sampled: 02/07/06				
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	6B09098	0.040	ND	0.998	2/9/2006	2/9/2006	
Sample ID: IPB0657-03 (PIZB-04-2.5 - Soil)				Sampled: 02/07/06				
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	6B09098	0.040	ND	0.998	2/9/2006	2/9/2006	
Sample ID: IPB0657-04 (PIZB-04-5 - Soil)				Sampled: 02/07/06				
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	6B09098	0.040	0.044	0.998	2/9/2006	2/9/2006	
Sample ID: IPB0657-05 (PIZB-04-7.5 - Soil)				Sampled: 02/07/06				
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	6B09098	0.040	ND	0.998	2/9/2006	2/9/2006	
Sample ID: IPB0657-06 (PIZB-04-10 - Soil)				Sampled: 02/07/06				
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	6B09098	0.040	ND	0.998	2/9/2006	2/9/2006	
Sample ID: IPB0657-07 (PIZB-04-15 - Soil)				Sampled: 02/07/06				
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	6B09098	0.040	ND	0.998	2/9/2006	2/9/2006	
Sample ID: IPB0657-08 (PIZB-04-20 - Soil)				Sampled: 02/07/06				
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	6B09098	0.040	ND	1	2/9/2006	2/9/2006	
Sample ID: IPB0657-09 (PIZB-04-25 - Soil)				Sampled: 02/07/06				
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	6B09098	0.040	0.072	0.995	2/9/2006	2/9/2006	
Sample ID: IPB0657-10 (PIZB-04-30 - Soil)				Sampled: 02/07/06				
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	6B09098	0.040	0.25	1	2/9/2006	2/10/2006	
Sample ID: IPB0657-11 (PIZB-04-35 - Soil)				Sampled: 02/07/06				
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	6B09098	0.040	0.15	0.998	2/9/2006	2/10/2006	

Del Mar Analytical, Irvine
Patty Mata
Project Manager

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IPB0657 <Page 3 of 7>



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Geomatrix-Corona
250 East Rincon Street, Suite 204
Corona, CA 92879
Attention: Rick Rees

Project ID: Aerojet Azusa
007190.004.17
Report Number: IPB0657

Sampled: 02/07/06
Received: 02/07/06

INORGANICS

Analyte	Method	Batch	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IPB0657-12 (PIZB-04-40 - Soil)				Sampled: 02/07/06				
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	6B09098	0.040	0.076	0.998	2/9/2006	2/10/2006	
Sample ID: IPB0657-13 (PIZB-04-45 - Soil)				Sampled: 02/07/06				
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	6B09098	0.040	0.19	0.998	2/9/2006	2/10/2006	
Sample ID: IPB0657-14 (PIZB-04-50 - Soil)				Sampled: 02/07/06				
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	6B09098	0.040	0.22	1	2/9/2006	2/10/2006	
Sample ID: IPB0657-15 (PSZB-60-1 - Soil)				Sampled: 02/07/06				
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	6B09098	0.040	ND	1	2/9/2006	2/10/2006	

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Patty Mata
Project Manager

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Corona, CA 92879
Attention: Rick Rees

Project ID: Aerojet Azusa
007190.004.17
Report Number: IPB0657

Sampled: 02/07/06
Received: 02/07/06

METHOD BLANK/QC DATA

INORGANICS

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 6B09098 Extracted: 02/09/06										
Blank Analyzed: 02/09/2006 (6B09098-BLK1)										
Perchlorate	ND	0.040	mg/kg							
LCS Analyzed: 02/09/2006 (6B09098-BS1)										
Perchlorate	0.493	0.040	mg/kg	0.500		99	85-115			
Matrix Spike Analyzed: 02/10/2006 (6B09098-MS1)										
Perchlorate	0.565	0.040	mg/kg	0.498	0.076	98	80-120			
Matrix Spike Dup Analyzed: 02/10/2006 (6B09098-MSD1)										
Perchlorate	0.557	0.040	mg/kg	0.498	0.076	97	80-120	1	20	

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Project Manager

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Corona, CA 92879
Attention: Rick Rees

Project ID: Aerojet Azusa
007190.004.17
Report Number: IPB0657

Sampled: 02/07/06
Received: 02/07/06

DATA QUALIFIERS AND DEFINITIONS

ND Analyte NOT DETECTED at or above the reporting limit or MDL, if MDL is specified.
RPD Relative Percent Difference

Del Mar Analytical, Irvine
Patty Mata
Project Manager

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Attention: Rick Rees

Project ID: Aerojet Azusa
007190.004.17
Report Number: IPB0657

Sampled: 02/07/06
Received: 02/07/06

Certification Summary

Del Mar Analytical, Irvine

Method	Matrix	Nelac	California
EPA 314.0 MOD.	Soil	N/A	N/A

Nevada and NELAP provide analyte specific accreditations. Analyte specific information for Del Mar Analytical may be obtained by contacting the laboratory or visiting our website at www.dmalabs.com.


Del Mar Analytical, Irvine
Patty Mata
Project Manager

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IPB0657 <Page 7 of 7>

CHAIN-OF-CUSTODY RECORD

COR 10104

PROJECT NAME				DATE: 02/07/06				PAGE		OF 1									
PROJECT NUMBER - 40004 1.7				LABORATORY NAME DEL MHN		CLIENT INFORMATION ALJET-HISA													
RESULTS TO G. RICHARD REES				LABORATORY ADDRESS 17461 DERIAN STE 100		REPORTING REQUIREMENTS IP130657													
TURNAROUND TIME STANDARD				IRVINE CA 92614															
SAMPLE SHIPMENT METHOD COURIER				LABORATORY CONTACT PATI MATTA		GEOTRACKER REQUIRED YES <input checked="" type="checkbox"/> NO													
				LABORATORY PHONE NUMBER 949-261-1022		SITE SPECIFIC GLOBAL ID NO													
SAMPLERS (SIGNATURE): <i>Kurt Zeller</i>				ANALYSES															
DATE	TIME	SAMPLE NUMBER	EPA 314	5-DAY TURNAROUND						CONTAINER TYPE AND SIZE	Soil (S), Water (W), Vapor (V), or Other (O)	Filtered	Preservative Type	Cooled	MS/MSD	No. of Containers	ADDITIONAL COMMENTS		
2/7/06	9:33	20060207EQB	X							PLASTIC 470 ML	W			X		1			
2/7/06	9:57	PI2B-04-01	X							GLASS 4 OZ	S			X		1			
2/7/06	10:57	PI2B-04-24-25	X							"	S			X		1			
2/7/06	11:11	PI2B-04-5	X							"	S			X		1			
2/7/06	11:17	PI2B-04-7.5	X							"	S			X		1			
2/7/06	11:30	PI2B-04-10	X							"	S			X		1			
2/7/06	11:40	PI2B-04-15	X							"	S			X		1			
2/7/06	11:49	PI2B-04-20	X							"	S			X		1			
2/7/06	12:01	PI2B-04-25	X							"	S			X		1			
2/7/06	12:13	PI2B-04-30	X							"	S			X		1			
2/7/06	12:17	PI2B-04-35	X							"	S			X		1			
2/7/06	12:04	PI2B-04-40	X	X						"	S			X		1	5-DAY TURNAROUND		
2/7/06	13:28	PI2B-04-45	X	X						"	S			X		1	5-DAY TURNAROUND		
2/7/06	14:03	PI2B-04-50	X	X						"	S			X		1	5-DAY TURNAROUND		
2/7/06	16:28	PS2B-60-1	X							"	S			X		1			
RELINQUISHED BY:		DATE	TIME	RECEIVED BY:		DATE	TIME	TOTAL NUMBER OF CONTAINERS: 15											
SIGNATURE: <i>Kurt Zeller</i>		2/7/06	16:41	SIGNATURE: <i>Jon Power</i>		2/7/06	1641	SAMPLING COMMENTS: <i>injection 5'</i>											
PRINTED NAME: KURT ZELLER				PRINTED NAME: Jon Power															
COMPANY: GEOMATRIX				COMPANY: OMAT															
SIGNATURE: <i>Jon Power</i>		2/7/06	1840	SIGNATURE: <i>Glin Chu</i>		2/7/06	1840												
PRINTED NAME: Jon Power				PRINTED NAME: Glin Chu															
COMPANY: OMAT				COMPANY: OMAT															
SIGNATURE:				SIGNATURE:															
PRINTED NAME:				PRINTED NAME:															
COMPANY:				COMPANY:															
										250 East Rincon Street, Suite 204 Corona, California 92879-1363 Tel 951.273.7400 Fax 951.273.7420									
										 Geomatrix									



LABORATORY REPORT

Prepared For: Geomatrix-Corona
250 East Rincon Street, Suite 204
Corona, CA 92879
Attention: Rick Rees

Project: Aerojet Azusa
007190.004.1.7

Sampled: 02/08/06-02/09/06
Received: 02/09/06
Issued: 02/23/06 09:37

NELAP #01108CA California ELAP#1197 CSDLAC #10117

*The results listed within this Laboratory Report pertain only to the samples tested in the laboratory. The analyses contained in this report were performed in accordance with the applicable certifications as noted. All soil samples are reported on a wet weight basis unless otherwise noted in the report. This Laboratory Report is confidential and is intended for the sole use of Del Mar Analytical and its client. This report shall not be reproduced, except in full, without written permission from Del Mar Analytical. The Chain(s) of Custody, 3 pages, are included and are an integral part of this report.
This entire report was reviewed and approved for release*

CASE NARRATIVE

SAMPLE RECEIPT: Samples were received intact, at 4°C, on ice and with chain of custody documentation.

HOLDING TIMES: All samples were analyzed within prescribed holding times and/or in accordance with the Del Mar Analytical Sample Acceptance Policy unless otherwise noted in the report.

PRESERVATION: Samples requiring preservation were verified prior to sample analysis.

QA/QC CRITERIA: All analyses met method criteria, except as noted in the report with data qualifiers.

COMMENTS: No significant observations were made.

SUBCONTRACTED: No analyses were subcontracted to an outside laboratory.

LABORATORY ID	CLIENT ID	MATRIX
IPB0946-01	PSZB-64-5	Soil
IPB0946-02	PSZB-64-1	Soil
IPB0946-03	PSZB-64-2.5	Soil
IPB0946-04	PSZB-64-7.5	Soil
IPB0946-05	PSZB-64-10	Soil
IPB0946-06	PSZB-64-15	Soil
IPB0946-07	PSZB-64-20	Soil
IPB0946-08	PSZB-64-25	Soil
IPB0946-09	PSZB-64-30	Soil
IPB0946-10	PSZB-64-35	Soil
IPB0946-11	PSZB-64-40	Soil

Del Mar Analytical, Irvine
Patty Mata
Project Manager



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Geomatrix-Corona
250 East Rincon Street, Suite 204
Corona, CA 92879
Attention: Rick Rees

Project ID: Aerojet Azusa
007190.004.1.7
Report Number: IPB0946

Sampled: 02/08/06-02/09/06
Received: 02/09/06

LABORATORY ID	CLIENT ID	MATRIX
IPB0946-12	PSZB-63-1	Soil
IPB0946-13	PSZB-63-2.5	Soil
IPB0946-14	PSZB-62-2.5	Soil
IPB0946-15	PSZB-62-1	Soil
IPB0946-16	PSZB-63-6	Soil
IPB0946-17	PSZB-63-7.5	Soil
IPB0946-18	PSZB-63-10	Soil
IPB0946-19	PSZB-63-15	Soil
IPB0946-20	PSZB-63-20	Soil
IPB0946-21	PSZB-63-25	Soil
IPB0946-22	PSZB-61-2.5	Soil
IPB0946-23	PSZB-61-1	Soil
IPB0946-24	PSZB-63-30	Soil
IPB0946-25	PSZB-63-35	Soil
IPB0946-26	PSZB-63-40	Soil
IPB0946-27	PSZB-55-5	Soil
IPB0946-28	PSZB-55-2.5	Soil
IPB0946-29	PSZB-55-1	Soil
IPB0946-30	PSZB-62-5	Soil
IPB0946-31	PSZB-62-7.5	Soil
IPB0946-32	PSZB-62-10	Soil
IPB0946-33	PSZB-62-15	Soil
IPB0946-34	PSZB-62-20	Soil
IPB0946-35	PSZB-62-25	Soil

Reviewed By:

Del Mar Analytical, Irvine
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IPB0946 <Page 2 of 10>



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 Attention: Rick Rees

Project ID: Aerojet Azusa
 007190 004.1.7
 Report Number: IPB0946

Sampled: 02/08/06-02/09/06
 Received: 02/09/06

INORGANICS

Analyte	Method	Batch	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IPB0946-01 (PSZB-64-5 - Soil)				Sampled: 02/08/06				
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	6B13090	0.040	ND	0.998	2/13/2006	2/16/2006	
Sample ID: IPB0946-02 (PSZB-64-1 - Soil)				Sampled: 02/08/06				
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	6B13090	0.040	ND	0.995	2/13/2006	2/16/2006	
Sample ID: IPB0946-03 (PSZB-64-2.5 - Soil)				Sampled: 02/08/06				
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	6B13120	0.040	ND	1	2/13/2006	2/13/2006	
Sample ID: IPB0946-04 (PSZB-64-7.5 - Soil)				Sampled: 02/09/06				
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	6B13120	0.040	ND	1	2/13/2006	2/14/2006	
Sample ID: IPB0946-05 (PSZB-64-10 - Soil)				Sampled: 02/09/06				
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	6B13120	0.040	ND	0.998	2/13/2006	2/14/2006	
Sample ID: IPB0946-06 (PSZB-64-15 - Soil)				Sampled: 02/09/06				
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	6B13120	0.040	ND	0.998	2/13/2006	2/14/2006	
Sample ID: IPB0946-07 (PSZB-64-20 - Soil)				Sampled: 02/09/06				
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	6B13120	0.040	ND	0.998	2/13/2006	2/14/2006	
Sample ID: IPB0946-08 (PSZB-64-25 - Soil)				Sampled: 02/09/06				
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	6B13120	0.040	ND	0.995	2/13/2006	2/14/2006	
Sample ID: IPB0946-09 (PSZB-64-30 - Soil)				Sampled: 02/09/06				
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	6B13120	0.040	ND	1	2/13/2006	2/14/2006	
Sample ID: IPB0946-10 (PSZB-64-35 - Soil)				Sampled: 02/09/06				
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	6B13120	0.040	ND	1	2/13/2006	2/14/2006	

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Project ID: Aerojet Azusa
007190 004.1.7
Report Number: IPB0946

Sampled: 02/08/06-02/09/06
Received: 02/09/06

INORGANICS

Analyte	Method	Batch	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IPB0946-11 (PSZB-64-40 - Soil)				Sampled: 02/09/06				
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	6B13120	0.040	ND	0.998	2/13/2006	2/14/2006	
Sample ID: IPB0946-12 (PSZB-63-1 - Soil)				Sampled: 02/09/06				
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	6B13120	0.040	ND	0.998	2/13/2006	2/14/2006	
Sample ID: IPB0946-13 (PSZB-63-2.5 - Soil)				Sampled: 02/09/06				
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	6B13120	0.040	0.053	0.998	2/13/2006	2/14/2006	
Sample ID: IPB0946-14 (PSZB-62-2.5 - Soil)				Sampled: 02/09/06				
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	6B13120	0.80	8.8	20	2/13/2006	2/14/2006	
Sample ID: IPB0946-15 (PSZB-62-1 - Soil)				Sampled: 02/09/06				
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	6B13120	0.40	1.6	9.98	2/13/2006	2/14/2006	
Sample ID: IPB0946-16 (PSZB-63-6 - Soil)				Sampled: 02/09/06				
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	6B13120	0.040	ND	1	2/13/2006	2/14/2006	
Sample ID: IPB0946-17 (PSZB-63-7.5 - Soil)				Sampled: 02/09/06				
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	6B13120	0.040	ND	1	2/13/2006	2/14/2006	
Sample ID: IPB0946-18 (PSZB-63-10 - Soil)				Sampled: 02/09/06				
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	6B13120	0.040	ND	0.995	2/13/2006	2/14/2006	
Sample ID: IPB0946-19 (PSZB-63-15 - Soil)				Sampled: 02/09/06				
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	6B13120	0.040	ND	0.995	2/13/2006	2/14/2006	
Sample ID: IPB0946-20 (PSZB-63-20 - Soil)				Sampled: 02/09/06				
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	6B13120	0.040	ND	1	2/13/2006	2/14/2006	

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Project ID: Aerojet Azusa
007190 004.1.7
Report Number: IPB0946

Sampled: 02/08/06-02/09/06
Received: 02/09/06

INORGANICS

Analyte	Method	Batch	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IPB0946-21 (PSZB-63-25 - Soil)				Sampled: 02/09/06				
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	6B13120	0.040	ND	0.993	2/13/2006	2/14/2006	
Sample ID: IPB0946-22 (PSZB-61-2.5 - Soil)				Sampled: 02/09/06				
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	6B13120	0.040	ND	1	2/13/2006	2/14/2006	
Sample ID: IPB0946-23 (PSZB-61-1 - Soil)				Sampled: 02/09/06				
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	6B14119	0.040	0.14	0.998	2/14/2006	2/14/2006	
Sample ID: IPB0946-24 (PSZB-63-30 - Soil)				Sampled: 02/09/06				
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	6B14119	0.040	ND	0.995	2/14/2006	2/14/2006	
Sample ID: IPB0946-25 (PSZB-63-35 - Soil)				Sampled: 02/09/06				
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	6B14119	0.040	ND	0.998	2/14/2006	2/14/2006	
Sample ID: IPB0946-26 (PSZB-63-40 - Soil)				Sampled: 02/09/06				
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	6B14119	0.040	ND	0.998	2/14/2006	2/14/2006	
Sample ID: IPB0946-27 (PSZB-55-5 - Soil)				Sampled: 02/09/06				
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	6B14119	0.040	ND	0.995	2/14/2006	2/14/2006	
Sample ID: IPB0946-28 (PSZB-55-2.5 - Soil)				Sampled: 02/09/06				
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	6B14119	0.040	ND	0.995	2/14/2006	2/14/2006	
Sample ID: IPB0946-29 (PSZB-55-1 - Soil)				Sampled: 02/09/06				
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	6B14119	0.040	ND	0.998	2/14/2006	2/15/2006	
Sample ID: IPB0946-30 (PSZB-62-5 - Soil)				Sampled: 02/09/06				
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	6B14119	0.040	0.35	0.998	2/14/2006	2/15/2006	

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Project ID: Aerojet Azusa
007190.004.1.7
Report Number: IPB0946

Sampled: 02/08/06-02/09/06
Received: 02/09/06

INORGANICS

Analyte	Method	Batch	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IPB0946-31 (PSZB-62-7.5 - Soil)				Sampled: 02/09/06				
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	6B14119	0.040	0.14	0.995	2/14/2006	2/15/2006	
Sample ID: IPB0946-32 (PSZB-62-10 - Soil)				Sampled: 02/09/06				
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	6B14119	0.040	ND	0.998	2/14/2006	2/15/2006	
Sample ID: IPB0946-33 (PSZB-62-15 - Soil)				Sampled: 02/09/06				
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	6B14119	0.040	ND	0.998	2/14/2006	2/16/2006	
Sample ID: IPB0946-34 (PSZB-62-20 - Soil)				Sampled: 02/09/06				
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	6B14119	0.040	ND	1	2/14/2006	2/15/2006	
Sample ID: IPB0946-35 (PSZB-62-25 - Soil)				Sampled: 02/09/06				
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	6B14119	0.040	ND	1	2/14/2006	2/15/2006	

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Project ID: Aerojet Azusa
007190.004.1.7
Report Number: IPB0946

Sampled: 02/08/06-02/09/06
Received: 02/09/06

METHOD BLANK/QC DATA

INORGANICS

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 6B13090 Extracted: 02/13/06										
Blank Analyzed: 02/14/2006 (6B13090-BLK1)										
Perchlorate	ND	0.040	mg/kg							
LCS Analyzed: 02/14/2006 (6B13090-BS1)										
Perchlorate	0.481	0.040	mg/kg	0.500		96	85-115			
Matrix Spike Analyzed: 02/14/2006 (6B13090-MS1)										
Perchlorate	0.495	0.040	mg/kg	0.498	ND	99	80-120			
Matrix Spike Dup Analyzed: 02/14/2006 (6B13090-MSD1)										
Perchlorate	0.513	0.040	mg/kg	0.500	ND	103	80-120	4	20	
Batch: 6B13120 Extracted: 02/13/06										
Blank Analyzed: 02/13/2006 (6B13120-BLK1)										
Perchlorate	ND	0.040	mg/kg							
LCS Analyzed: 02/13/2006 (6B13120-BS1)										
Perchlorate	0.474	0.040	mg/kg	0.500		95	85-115			
Matrix Spike Analyzed: 02/13/2006 (6B13120-MS1)										
Perchlorate	0.511	0.040	mg/kg	0.499	ND	102	80-120			
Matrix Spike Dup Analyzed: 02/13/2006 (6B13120-MSD1)										
Perchlorate	0.506	0.040	mg/kg	0.499	ND	101	80-120	1	20	
Batch: 6B14119 Extracted: 02/14/06										
Blank Analyzed: 02/14/2006 (6B14119-BLK1)										
Perchlorate	ND	0.040	mg/kg							

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METHOD BLANK/QC DATA

INORGANICS

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 6B14119 Extracted: 02/14/06									
LCS Analyzed: 02/14/2006 (6B14119-BS1)									
Perchlorate	0.510	0.040	mg/kg	0.500		102 85-115			
Matrix Spike Analyzed: 02/14/2006 (6B14119-MS1)									
Perchlorate	0.710	0.040	mg/kg	0.499	0.14	114 80-120			
Matrix Spike Dup Analyzed: 02/14/2006 (6B14119-MSD1)									
Perchlorate	0.699	0.040	mg/kg	0.499	0.14	112 80-120	2	20	

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Sampled: 02/08/06-02/09/06
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DATA QUALIFIERS AND DEFINITIONS

ND Analyte NOT DETECTED at or above the reporting limit or MDL, if MDL is specified.
RPD Relative Percent Difference

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Geomatrix-Corona
250 East Rincon Street, Suite 204
Corona, CA 92879
Attention: Rick Rees

Project ID: Aerojet Azusa
007190.004.1.7
Report Number: IPB0946

Sampled: 02/08/06-02/09/06
Received: 02/09/06

Certification Summary

Del Mar Analytical, Irvine

Method	Matrix	Nelac	California
EPA 314.0 MOD.	Soil	N/A	N/A

Nevada and NELAP provide analyte specific accreditations. Analyte specific information for Del Mar Analytical may be obtained by contacting the laboratory or visiting our website at www.dmalabs.com.

Del Mar Analytical, Irvine
Patty Mata
Project Manager

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IPB0946 <Page 10 of 10>

CHAIN-OF-CUSTODY RECORD

82

IPB0946

COR 10108

PROJECT NAME: AERDJET-AISA PENNINELMER AOC				DATE: 2/9/06		PAGE 1 OF 3	
PROJECT NUMBER: 7190.004 1.7		LABORATORY NAME: DEL MAR		CLIENT INFORMATION: AERDJET-AISA		REPORTING REQUIREMENTS	
RESULTS TO: G. RICHARD REES		LABORATORY ADDRESS: 17461 DEAN STE 100					
TURNAROUND TIME: STANDARD		IRVINE CA 92614					
SAMPLE SHIPMENT METHOD: COURIER		LABORATORY CONTACT: PATTI MATA		LABORATORY PHONE NUMBER: 949-261-1022		GEOTRACKER REQUIRED: YES (NO)	
						SITE SPECIFIC GLOBAL ID NO	

SAMPLERS (SIGNATURE):			ANALYSES										CONTAINER TYPE AND SIZE	Soil (S), Water (W), Vapor (V), or Other (O)	Filtered	Preservative Type	Cooled	MS/MSD	No. of Containers	ADDITIONAL COMMENTS
DATE	TIME	SAMPLE NUMBER	EPA 314																	
2/8/06	17:08	PS2B-64-5	X										GLASS 40Z	S			X		1	
2/8/06	17:09	PS2B-64-1	X										GLASS 40Z	S			X		1	
2/8/06	17:10	PS2B-64-2.5	X										" "	S			X		1	
2/9/06	7:06	PS2B-64-7.5	X										" "	S			X		1	
2/9/06	7:18	PS2B-64-10	X										" "	S			X		1	
2/9/06	8:23	PS2B-64-15	X										" "	S			X		1	
2/9/06	8:21	PS2B-64-20	X										" "	S			X		1	
2/9/06	8:27	PS2B-64-25	X										" "	S			X		1	
2/9/06	8:33	PS2B-64-30	X										" "	S			X		1	
2/9/06	8:43	PS2B-64-35	X										" "	S			X		1	
2/9/06	8:43	PS2B-64-40	X										" "	S			X		1	
2/9/06	10:05	PS2B-63-1	X										" "	S			X		1	
2/9/06	10:08	PS2B-63-2.5	X										" "	S			X		1	
2/9/06	11:14	PS2B-62-2.5	X										" "	S			X		1	
2/9/06	11:16	PS2B-62-1	X										" "	S			X		1	

RELINQUISHED BY:	DATE	TIME	RECEIVED BY:	DATE	TIME	TOTAL NUMBER OF CONTAINERS	15
SIGNATURE: [Signature]	2/9/06	16:46	SIGNATURE: [Signature]	2/9/06	16:46	SAMPLING COMMENTS:	
PRINTED NAME: KORT K ZEILER			PRINTED NAME: JON POWERS				
COMPANY: GEOMATRIX			COMPANY: DMAT				
SIGNATURE: [Signature]	2/9/06	18:20	SIGNATURE: [Signature]	2/9/06	18:20		
PRINTED NAME: JON POWERS			PRINTED NAME: SAM GUNAWAN				
COMPANY: DMAT			COMPANY: DMAT				
SIGNATURE:			SIGNATURE:			250 East Rincon Street, Suite 204 Corona, California 92879-1363 Tel 951.273.7400 Fax 951.273.7420	
PRINTED NAME:			PRINTED NAME:				
COMPANY:			COMPANY:				



Geomatrix

CHAIN-OF-CUSTODY RECORD


CCR 10100

PROJECT NAME: AERJET-AISA PEAKIN ELMER AOC						DATE: 2/9/2006		PAGE 2 OF 3	
PROJECT NUMBER: 2190.004 1.7			LABORATORY NAME: DELMAR		CLIENT INFORMATION: AERJET-AISA		REPORTING REQUIREMENTS		
RESULTS TO: G. RICHARD REES			LABORATORY ADDRESS: 17461 DEERIAN STE 100						
TURNAROUND TIME: STANDARD			IRVINE CA 92614						
SAMPLE SHIPMENT METHOD: COURIER			LABORATORY CONTACT: PATTI MATA		LABORATORY PHONE NUMBER: 949-261-1022		GEOTRACKER REQUIRED: YES <input checked="" type="checkbox"/>		
							SITE SPECIFIC GLOBAL ID NO		

SAMPLERS (SIGNATURE):			ANALYSES										CONTAINER TYPE AND SIZE		Soil (S), Water (W), Vapor (V), or Other (O)	Filtered	Preservative Type	Cooled	MS/MSD	No of Containers	ADDITIONAL COMMENTS	
DATE	TIME	SAMPLE NUMBER	EPA 314																			
2/9/06	11:30	PSZB-63-6	X												GLASS 40Z	S			X		1	
2/9/06	11:33	PSZB-63-7.5	X												" "	S			X		1	
2/9/06	11:48	PSZB-63-10	X												" "	S			X		1	
2/9/06	11:56	PSZB-63-15	X												" "	S			X		1	
2/9/06	12:16	PSZB-63-20	X												" "	S			X		1	
2/9/06	12:26	PSZB-63-25	X												" "	S			X		1	
2/9/06	12:36	PSZB-63-2.5	X												" "	S			X		1	
2/9/06	12:38	PSZB-61-1	X												" "	S			X		1	
2/9/06	13:42	PSZB-63-30	X												" "	S			X		1	
2/9/06	13:52	PSZB-63-35	X												" "	S			X		1	
2/9/06	13:54	PSZB-63-40	X												" "	S			X		1	
2/9/06	15:03	PSZB-55-5	X												" "	S			X		1	
2/9/06	15:04	PSZB-55-2.5	X												" "	S			X		1	
2/9/06	15:05	PSZB-55-1	X												" "	S			X		1	
2/9/06	15:06	PSZB																				

RELINQUISHED BY:		DATE	TIME	RECEIVED BY:		DATE	TIME	TOTAL NUMBER OF CONTAINERS: 14	
SIGNATURE: <i>[Signature]</i>		2/9/06	16:40	SIGNATURE: <i>[Signature]</i>		2/9/06	16:40	SAMPLING COMMENTS:	
PRINTED NAME: KURT REZILER				PRINTED NAME: JOR POWER					
COMPANY: GEOMATRIX				COMPANY: DMAE					
SIGNATURE: <i>[Signature]</i>				SIGNATURE: <i>[Signature]</i>					
PRINTED NAME: JOR POWER		2/9/06	18:20	PRINTED NAME: STAN GUNAWAN		2/9/06	18:20		
COMPANY: DMAE				COMPANY: DMAE					
SIGNATURE:				SIGNATURE:					
PRINTED NAME:				PRINTED NAME:					
COMPANY:				COMPANY:					


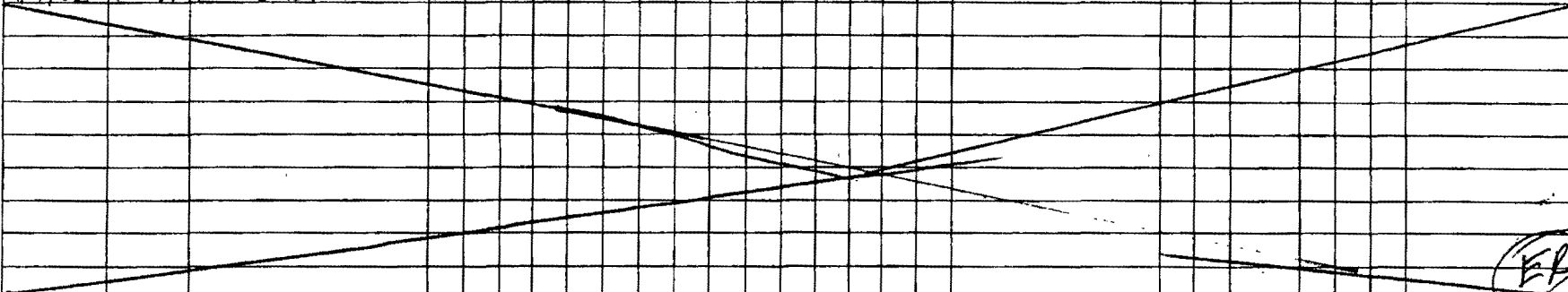


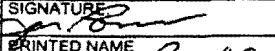


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Geomatrix

CHAIN-OF-CUSTODY RECORD

COR 10110

PROJECT NAME: AEROJET-AISA PERKINELMER AOC				DATE: 2/9/06		PAGE 3 OF 3																					
PROJECT NUMBER: 7190.004 1.7		LABORATORY NAME: DEL MAX		CLIENT INFORMATION: AEROJET-AISA		REPORTING REQUIREMENTS																					
RESULTS TO: G. RICHARD REES		LABORATORY ADDRESS: 17461 DEAN STE 100																									
TURNAROUND TIME: STANDARD		IRVINE CA 92614																									
SAMPLE SHIPMENT METHOD: COCAIEM		LABORATORY CONTACT: PATTI MATA		GEOTRACKER REQUIRED		YES <input checked="" type="checkbox"/> NO <input type="checkbox"/>																					
		LABORATORY PHONE NUMBER: 949-261-1022				SITE SPECIFIC GLOBAL ID NO																					
SAMPLERS (SIGNATURE): 			ANALYSES																								
DATE	TIME	SAMPLE NUMBER	EPA 314			CONTAINER TYPE AND SIZE	Soil (S), Water (W), Vapor (V), or Other (O)	Filtered	Preservative Type	Cooled	MS/MSD	No. of Containers	ADDITIONAL COMMENTS														
2/9/06	15:50	PSZB-62-5	X			GLASS 4 OZ	S			X		1															
2/9/06	15:53	PSZB-62-7.5	X			" "	S			X		1															
2/9/06	15:59	PSZB-62-10	X			" "	S			X		1															
2/9/06	16:04	PSZB-62-15	X			" "	S			X		1															
2/9/06	16:26	PSZB-62-20	X			" "	S			X		1															
2/9/06	16:31	PSZB-62-25	X			" "	S			X		1															
																											
RELINQUISHED BY:		DATE	TIME	RECEIVED BY:		DATE	TIME	TOTAL NUMBER OF CONTAINERS: 6																			
SIGNATURE: 		2/9/06	16:46	SIGNATURE: 		2/9/06	16:46	SAMPLING COMMENTS:																			
PRINTED NAME: KURT KESSLER				PRINTED NAME: Jon Power																							
COMPANY: GEOMATRIX				COMPANY: DMAI																							
SIGNATURE: 		2/9/06	18:20	SIGNATURE: 		2/9/06	18:20	4°C																			
PRINTED NAME: Jon Power				PRINTED NAME: Stacy Guzman																							
COMPANY: DMAI				COMPANY: DMAI																							
SIGNATURE:				SIGNATURE:				250 East Rincon Street, Suite 204		 Geomatrix																	
PRINTED NAME:				PRINTED NAME:				Corona, California 92879-1363																			
COMPANY:				COMPANY:				Tel 951.273.7400 Fax 951.273.7420																			



LABORATORY REPORT

Prepared For: Geomatrix-Corona
250 East Rincon Street, Suite 204
Corona, CA 92879
Attention: Rick Rees

Project: Aerojet Azusa
007190.004.1.7

Sampled: 02/07/06-02/08/06
Received: 02/08/06
Issued: 02/22/06 09:32

NELAP #01108CA California ELAP#1197 CSDLAC #10117

The results listed within this Laboratory Report pertain only to the samples tested in the laboratory. The analyses contained in this report were performed in accordance with the applicable certifications as noted. All soil samples are reported on a wet weight basis unless otherwise noted in the report. This Laboratory Report is confidential and is intended for the sole use of Del Mar Analytical and its client. This report shall not be reproduced, except in full, without written permission from Del Mar Analytical. The Chain(s) of Custody, 3 pages, are included and are an integral part of this report. This entire report was reviewed and approved for release.

CASE NARRATIVE

SAMPLE RECEIPT: Samples were received intact, at 4°C, on ice and with chain of custody documentation.

HOLDING TIMES: All samples were analyzed within prescribed holding times and/or in accordance with the Del Mar Analytical Sample Acceptance Policy unless otherwise noted in the report.

PRESERVATION: Samples requiring preservation were verified prior to sample analysis.

QA/QC CRITERIA: All analyses met method criteria, except as noted in the report with data qualifiers.

COMMENTS: No significant observations were made.

SUBCONTRACTED: No analyses were subcontracted to an outside laboratory.

LABORATORY ID	CLIENT ID	MATRIX
IPB0808-01	PSZB-60-2.5	Soil
IPB0808-02	PSZB-60-5	Soil
IPB0808-03	PSZB-60-10	Soil
IPB0808-04	PSZB-60-15	Soil
IPB0808-05	PSZB-60-20	Soil
IPB0808-06	PSZB-60-25	Soil
IPB0808-07	PSZB-60-30	Soil
IPB0808-08	PSZB-60-35	Soil
IPB0808-09	PSZB-60-40	Soil
IPB0808-10	PSZB-45-1	Soil
IPB0808-11	PSZB-45-2.5	Soil

Del Mar Analytical, Irvine
Patty Mata
Project Manager



Del Mar Analytical

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Geomatrix-Corona
250 East Rincon Street, Suite 204
Corona, CA 92879
Attention: Rick Rees

Project ID: Aerojet Azusa
007190.004.1.7
Report Number: IPB0808

Sampled: 02/07/06-02/08/06
Received: 02/08/06

LABORATORY ID	CLIENT ID	MATRIX
IPB0808-12	PSZB-66-1	Soil
IPB0808-13	PSZB-66-2.5	Soil
IPB0808-14	PSZB-45-6	Soil
IPB0808-15	PSZB-45-7.5	Soil
IPB0808-16	PSZB-67-5.5	Soil
IPB0808-17	PSZB-45-10	Soil
IPB0808-18	PSZB-67-1	Soil
IPB0808-19	PSZB-67-2.5	Soil
IPB0808-20	PSZB-45-15	Soil
IPB0808-21	PSZB-45-20	Soil
IPB0808-22	PSZB-45-25	Soil
IPB0808-23	PSZB-45-30	Soil
IPB0808-24	PSZB-51-5	Soil
IPB0808-25	PSZB-51-1	Soil
IPB0808-26	PSZB-45-35	Soil
IPB0808-27	PSZB-45-40	Soil
IPB0808-28	PSZB-51-2.5	Soil
IPB0808-29	PSZB-50-5	Soil
IPB0808-30	PSZB-50-1	Soil
IPB0808-31	PSZB-50-2.5	Soil

Reviewed By:

Del Mar Analytical, Irvine
Patty Mata
Project Manager

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IPB0808 <Page 2 of 10>



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Geomatrix-Corona
250 East Rincon Street, Suite 204
Corona, CA 92879
Attention: Rick Rees

Project ID: Aerojet Azusa
007190.004.1.7
Report Number: IPB0808

Sampled: 02/07/06-02/08/06
Received: 02/08/06

INORGANICS

Analyte	Method	Batch	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IPB0808-01 (PSZB-60-2.5 - Soil)				Sampled: 02/07/06				
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	6B09098	0.040	ND	1	2/9/2006	2/10/2006	
Sample ID: IPB0808-02 (PSZB-60-5 - Soil)				Sampled: 02/07/06				
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	6B09098	0.040	ND	0.995	2/9/2006	2/10/2006	
Sample ID: IPB0808-03 (PSZB-60-10 - Soil)				Sampled: 02/08/06				
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	6B09098	0.040	ND	1	2/9/2006	2/10/2006	
Sample ID: IPB0808-04 (PSZB-60-15 - Soil)				Sampled: 02/08/06				
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	6B09098	0.040	ND	1	2/9/2006	2/10/2006	
Sample ID: IPB0808-05 (PSZB-60-20 - Soil)				Sampled: 02/08/06				
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	6B09098	0.040	ND	0.998	2/9/2006	2/10/2006	
Sample ID: IPB0808-06 (PSZB-60-25 - Soil)				Sampled: 02/08/06				
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	6B09098	0.040	ND	0.998	2/9/2006	2/10/2006	
Sample ID: IPB0808-07 (PSZB-60-30 - Soil)				Sampled: 02/08/06				
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	6B10088	0.040	ND	1	2/10/2006	2/13/2006	
Sample ID: IPB0808-08 (PSZB-60-35 - Soil)				Sampled: 02/08/06				
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	6B10088	0.040	ND	1.01	2/10/2006	2/13/2006	
Sample ID: IPB0808-09 (PSZB-60-40 - Soil)				Sampled: 02/08/06				
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	6B10088	0.040	ND	1.01	2/10/2006	2/13/2006	
Sample ID: IPB0808-10 (PSZB-45-1 - Soil)				Sampled: 02/08/06				
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	6B10088	0.040	ND	1.01	2/10/2006	2/13/2006	

Del Mar Analytical, Irvine
Patty Mata
Project Manager

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Geomatrix-Corona
 250 East Rincon Street, Suite 204
 Corona, CA 92879
 Attention: Rick Rees

Project ID: Aerojet Azusa
 007190.004.1.7
 Report Number: IPB0808

Sampled: 02/07/06-02/08/06
 Received: 02/08/06

INORGANICS

Analyte	Method	Batch	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IPB0808-11 (PSZB-45-2.5 - Soil)				Sampled: 02/08/06				
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	6B10088	0.040	ND	1.01	2/10/2006	2/13/2006	
Sample ID: IPB0808-12 (PSZB-66-1 - Soil)				Sampled: 02/08/06				
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	6B10088	0.040	ND	1	2/10/2006	2/13/2006	
Sample ID: IPB0808-13 (PSZB-66-2.5 - Soil)				Sampled: 02/08/06				
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	6B10088	0.040	ND	1	2/10/2006	2/13/2006	
Sample ID: IPB0808-14 (PSZB-45-6 - Soil)				Sampled: 02/08/06				
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	6B10088	0.040	ND	0.998	2/10/2006	2/13/2006	
Sample ID: IPB0808-15 (PSZB-45-7.5 - Soil)				Sampled: 02/08/06				
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	6B10088	0.040	ND	1	2/10/2006	2/13/2006	
Sample ID: IPB0808-16 (PSZB-67-5.5 - Soil)				Sampled: 02/08/06				
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	6B10088	0.040	ND	1	2/10/2006	2/13/2006	
Sample ID: IPB0808-17 (PSZB-45-10 - Soil)				Sampled: 02/08/06				
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	6B10088	0.040	ND	1	2/10/2006	2/13/2006	
Sample ID: IPB0808-18 (PSZB-67-1 - Soil)				Sampled: 02/08/06				
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	6B10088	0.040	ND	0.995	2/10/2006	2/13/2006	
Sample ID: IPB0808-19 (PSZB-67-2.5 - Soil)				Sampled: 02/08/06				
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	6B10088	0.040	ND	1	2/10/2006	2/13/2006	
Sample ID: IPB0808-20 (PSZB-45-15 - Soil)				Sampled: 02/08/06				
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	6B10088	0.040	ND	0.998	2/10/2006	2/13/2006	

Del Mar Analytical, Irvine
 Patty Mata
 Project Manager

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IPB0808 <Page 4 of 10>



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Geomatrix-Corona
 250 East Rincon Street, Suite 204
 Corona, CA 92879
 Attention: Rick Rees

Project ID: Aerojet Azusa
 007190.004.1.7
 Report Number: IPB0808

Sampled: 02/07/06-02/08/06
 Received: 02/08/06

INORGANICS

Analyte	Method	Batch	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IPB0808-21 (PSZB-45-20 - Soil)				Sampled: 02/08/06				
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	6B10088	0.040	ND	0.998	2/10/2006	2/13/2006	
Sample ID: IPB0808-22 (PSZB-45-25 - Soil)				Sampled: 02/08/06				
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	6B10088	0.040	ND	0.998	2/10/2006	2/13/2006	
Sample ID: IPB0808-23 (PSZB-45-30 - Soil)				Sampled: 02/08/06				
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	6B10088	0.040	ND	0.998	2/10/2006	2/13/2006	
Sample ID: IPB0808-24 (PSZB-51-5 - Soil)				Sampled: 02/08/06				
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	6B10088	0.040	ND	1	2/10/2006	2/13/2006	
Sample ID: IPB0808-25 (PSZB-51-1 - Soil)				Sampled: 02/08/06				
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	6B10088	0.040	ND	0.995	2/10/2006	2/13/2006	
Sample ID: IPB0808-26 (PSZB-45-35 - Soil)				Sampled: 02/08/06				
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	6B10088	0.040	ND	1	2/10/2006	2/13/2006	
Sample ID: IPB0808-27 (PSZB-45-40 - Soil)				Sampled: 02/08/06				
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	6B13090	0.040	ND	1	2/13/2006	2/14/2006	
Sample ID: IPB0808-28 (PSZB-51-2.5 - Soil)				Sampled: 02/08/06				
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	6B13090	0.040	ND	1	2/13/2006	2/14/2006	
Sample ID: IPB0808-29 (PSZB-50-5 - Soil)				Sampled: 02/08/06				
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	6B13090	0.040	ND	0.998	2/13/2006	2/15/2006	
Sample ID: IPB0808-30 (PSZB-50-1 - Soil)				Sampled: 02/08/06				
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	6B13090	0.040	ND	0.998	2/13/2006	2/15/2006	

Del Mar Analytical, Irvine
 Patty Mata
 Project Manager

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IPB0808 <Page 5 of 10>



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2520 E. Sunset Rd. #3, Las Vegas, NV 89120 (702) 798-3620 FAX (702) 798-3621

Geomatrix-Corona
250 East Rincon Street, Suite 204
Corona, CA 92879
Attention: Rick Rees

Project ID: Aerojet Azusa
007190.004.1.7
Report Number: IPB0808

Sampled: 02/07/06-02/08/06
Received: 02/08/06

INORGANICS

Analyte	Method	Batch	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IPB0808-31 (PSZB-50-2.5 - Soil)				Sampled: 02/08/06				
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	6B13090	0.040	ND	0.998	2/13/2006	2/15/2006	

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Patty Mata
Project Manager

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IPB0808 <Page 6 of 10>



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Geomatrix-Corona
250 East Rincon Street, Suite 204
Corona, CA 92879
Attention: Rick Rees

Project ID: Aerojet Azusa
007190.004.1.7
Report Number: IPB0808

Sampled: 02/07/06-02/08/06
Received: 02/08/06

METHOD BLANK/QC DATA

INORGANICS

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 6B09098 Extracted: 02/09/06										
Blank Analyzed: 02/09/2006 (6B09098-BLK1)										
Perchlorate	ND	0.040	mg/kg							
LCS Analyzed: 02/09/2006 (6B09098-BS1)										
Perchlorate	0.493	0.040	mg/kg	0.500		99	85-115			
Matrix Spike Analyzed: 02/10/2006 (6B09098-MS1)										
Perchlorate	0.565	0.040	mg/kg	0.498	0.076	98	80-120			
Matrix Spike Dup Analyzed: 02/10/2006 (6B09098-MSD1)										
Perchlorate	0.557	0.040	mg/kg	0.498	0.076	97	80-120	1	20	
Batch: 6B10088 Extracted: 02/10/06										
Blank Analyzed: 02/13/2006 (6B10088-BLK1)										
Perchlorate	ND	0.040	mg/kg							
LCS Analyzed: 02/13/2006 (6B10088-BS1)										
Perchlorate	0.517	0.040	mg/kg	0.500		103	85-115			
Matrix Spike Analyzed: 02/13/2006 (6B10088-MS1)										
Perchlorate	0.518	0.040	mg/kg	0.498	ND	104	80-120			
Matrix Spike Dup Analyzed: 02/13/2006 (6B10088-MSD1)										
Perchlorate	0.525	0.040	mg/kg	0.500	ND	105	80-120	1	20	
Batch: 6B13090 Extracted: 02/13/06										
Blank Analyzed: 02/14/2006 (6B13090-BLK1)										
Perchlorate	ND	0.040	mg/kg							

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Geomatrix-Corona
250 East Rincon Street, Suite 204
Corona, CA 92879
Attention: Rick Rees

Project ID: Aerojet Azusa
007190.004.1.7
Report Number: IPB0808

Sampled: 02/07/06-02/08/06
Received: 02/08/06

METHOD BLANK/QC DATA

INORGANICS

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 6B13090 Extracted: 02/13/06									
LCS Analyzed: 02/14/2006 (6B13090-BS1)									
Perchlorate	0.481	0.040	mg/kg	0.500		96 85-115			
Matrix Spike Analyzed: 02/14/2006 (6B13090-MS1)									
Perchlorate	0.495	0.040	mg/kg	0.498	ND	99 80-120			
Matrix Spike Dup Analyzed: 02/14/2006 (6B13090-MSD1)									
Perchlorate	0.513	0.040	mg/kg	0.500	ND	103 80-120	4	20	

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Geomatrix-Corona
250 East Rincon Street, Suite 204
Corona, CA 92879
Attention: Rick Rees

Project ID: Aerojet Azusa
007190.004.1.7
Report Number: IPB0808

Sampled: 02/07/06-02/08/06
Received: 02/08/06

DATA QUALIFIERS AND DEFINITIONS

ND Analyte NOT DETECTED at or above the reporting limit or MDL, if MDL is specified.
RPD Relative Percent Difference

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Patty Mata
Project Manager

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Geomatrix-Corona
250 East Rincon Street, Suite 204
Corona, CA 92879
Attention: Rick Rees

Project ID: Aerojet Azusa
007190.004.1.7
Report Number: IPB0808

Sampled: 02/07/06-02/08/06
Received: 02/08/06

Certification Summary

Del Mar Analytical, Irvine

Method	Matrix	Nelac	California
EPA 314.0 MOD.	Soil	N/A	N/A

Nevada and NELAP provide analyte specific accreditations. Analyte specific information for Del Mar Analytical may be obtained by contacting the laboratory or visiting our website at www.dmalabs.com.

Del Mar Analytical, Irvine
Patty Mata
Project Manager

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IPB0808 <Page 10 of 10>

047

CHAIN-OF-CUSTODY RECORD

IPB0808

COR 10105

PROJECT NAME: AEROJET-AISA AOC-PERKIN ELMER						DATE: 2/8/2006		PAGE 1 OF 3						
PROJECT NUMBER 7190.004 1.7			LABORATORY NAME DEL MAR		CLIENT INFORMATION: AEROJET-AISA		REPORTING REQUIREMENTS:							
RESULTS TO G. RICHARD REES			LABORATORY ADDRESS 17461 DEXTER STE 100											
TURNAROUND TIME STANDARD			IRVINE CA 92614											
SAMPLE SHIPMENT METHOD COURIER			LABORATORY CONTACT PATTE MATA LABORATORY PHONE NUMBER 949-261-1022				GEOTRACKER REQUIRED YES <input checked="" type="checkbox"/> NO							
SAMPLERS (SIGNATURE):			ANALYSES				SITE SPECIFIC GLOBAL ID NO							
DATE	TIME	SAMPLE NUMBER	EPA 314				CONTAINER TYPE AND SIZE	Soil (S), Water (W), Vapor (V), or Other (O)	Filtered	Preservative Type	Cooled	MSMSD	No of Containers	ADDITIONAL COMMENTS
2/7/06	17:26	PS2B-60-2.5	X				GLASS 402	S			X		1	
2/7/06	17:37	PS2B-60-5	X				" "	S			X		1	
2/8/06	9:27	PS2B-60-10	X				" "	S			X		1	
2/8/06	9:27	PS2B-60-15	X				" "	S			X		1	
2/8/06	9:56	PS2B-60-20	X				" "	S			X		1	
2/8/06	10:03	PS2B-60-25	X				" "	S			X		1	
2/8/06	10:13	PS2B-60-30	X				" "	S			X		1	
2/8/06	10:19	PS2B-60-35	X				" "	S			X		1	
2/8/06	10:22	PS2B-60-40	X				" "	S			X		1	
2/8/06	11:21	PS2B-45-1	X				" "	S			X		1	
2/8/06	11:23	PS2B-45-2.5	X				" "	S			X		1	
2/8/06	11:27	PS2B-66-1	X				" "	S			X		1	
2/8/06	11:29	PS2B-66-2.5	X				" "	S			X		1	
2/8/06	12:53	PS2B-45-6	X				" "	S			X		1	
2/8/06	12:56	PS2B-45-7.5	X				" "	S			X		1	
RELINQUISHED BY:		DATE	TIME	RECEIVED BY:		DATE	TIME	TOTAL NUMBER OF CONTAINERS 15						
SIGNATURE: <i>[Signature]</i>		2/8/06	18:28	SIGNATURE: <i>[Signature]</i>		2/8/06	18:28	SAMPLING COMMENTS						
PRINTED NAME: KURT K ZETLER				PRINTED NAME: Michelle Croull										
COMPANY: GEOMATRIX				COMPANY: DMAI										
SIGNATURE: <i>[Signature]</i>		2/8/06	18:00	SIGNATURE: <i>[Signature]</i>		2/8/06	18:00							
PRINTED NAME: Michelle Croull				PRINTED NAME: Eduardo Ruiz										
COMPANY: DMAI				COMPANY: DMAI										
SIGNATURE: <i>[Signature]</i>				SIGNATURE: <i>[Signature]</i>										
PRINTED NAME: <i>[Signature]</i>				PRINTED NAME: <i>[Signature]</i>										
COMPANY: <i>[Signature]</i>				COMPANY: <i>[Signature]</i>										
250 East Rincon Street, Suite 204 Corona, California 92879-1363 Tel 951.273.7400 Fax 951.273.7420								 Geomatrix						

COR 10106

[illegible]

COR 10107


Geomatrix



LABORATORY REPORT

Prepared For: Geomatrix-Corona
250 East Rincon Street, Suite 204
Corona, CA 92879
Attention: Rick Rees

Project: Aerojet Azusa
007190.004.1.7

Sampled: 02/13/06
Received: 02/13/06
Issued: 02/20/06 13:56

NELAP #01108CA California ELAP#1197 CSDLAC #10117

The results listed within this Laboratory Report pertain only to the samples tested in the laboratory. The analyses contained in this report were performed in accordance with the applicable certifications as noted. All soil samples are reported on a wet weight basis unless otherwise noted in the report. This Laboratory Report is confidential and is intended for the sole use of Del Mar Analytical and its client. This report shall not be reproduced, except in full, without written permission from Del Mar Analytical. The Chain(s) of Custody, 2 pages, are included and are an integral part of this report. This entire report was reviewed and approved for release

CASE NARRATIVE

SAMPLE RECEIPT: Samples were received intact, at 5°C, on ice and with chain of custody documentation.

HOLDING TIMES: All samples were analyzed within prescribed holding times and/or in accordance with the Del Mar Analytical Sample Acceptance Policy unless otherwise noted in the report.

PRESERVATION: Samples requiring preservation were verified prior to sample analysis.

QA/QC CRITERIA: All analyses met method criteria, except as noted in the report with data qualifiers.

COMMENTS: Only the rush perchlorate sample results are included in this report. All other results will be sent under separate cover when complete.

SUBCONTRACTED: No analyses were subcontracted to an outside laboratory.

LABORATORY ID	CLIENT ID	MATRIX
IPB1266-07	PSZB-66-30	Soil
IPB1266-08	PSZB-66-35	Soil
IPB1266-09	PSZB-66-40	Soil
IPB1266-16	PSZB-67-35	Soil
IPB1266-17	PSZB-67-40	Soil

Reviewed By:

Del Mar Analytical, Irvine
Patty Mata
Project Manager



Del Mar Analytical

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2520 E. Sunset Rd. #3, Las Vegas, NV 89120 (702) 798-3620 FAX (702) 798-3621

Geomatrix-Corona
250 East Rincon Street, Suite 204
Corona, CA 92879
Attention: Rick Rees

Project ID: Aerojet Azusa
007190.004.1.7
Report Number: IPB1266

Sampled: 02/13/06
Received: 02/13/06

INORGANICS

Analyte	Method	Batch	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IPB1266-07 (PSZB-66-30 - Soil)								
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	6B15145	0.040	ND	0.998	2/15/2006	2/17/2006	
Sample ID: IPB1266-08 (PSZB-66-35 - Soil)								
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	6B15145	0.040	ND	0.998	2/15/2006	2/16/2006	
Sample ID: IPB1266-09 (PSZB-66-40 - Soil)								
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	6B15145	0.040	ND	0.998	2/15/2006	2/17/2006	
Sample ID: IPB1266-16 (PSZB-67-35 - Soil)								
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	6B15145	0.040	ND	0.998	2/15/2006	2/17/2006	
Sample ID: IPB1266-17 (PSZB-67-40 - Soil)								
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	6B15145	0.040	ND	0.995	2/15/2006	2/17/2006	

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Project Manager

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Geomatrix-Corona
250 East Rincon Street, Suite 204
Corona, CA 92879
Attention: Rick Rees

Project ID: Aerojet Azusa
007190.004.1.7
Report Number: IPB1266

Sampled: 02/13/06
Received: 02/13/06

METHOD BLANK/QC DATA

INORGANICS

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 6B15145 Extracted: 02/15/06									
Blank Analyzed: 02/16/2006 (6B15145-BLK1)									
Perchlorate	ND	0.040	mg/kg						
LCS Analyzed: 02/16/2006 (6B15145-BS1)									
Perchlorate	0.525	0.040	mg/kg	0.500		105 85-115			
Matrix Spike Analyzed: 02/16/2006 (6B15145-MS1)									
Perchlorate	0.534	0.040	mg/kg	0.498	ND	107 80-120			
Matrix Spike Dup Analyzed: 02/16/2006 (6B15145-MSD1)									
Perchlorate	0.538	0.040	mg/kg	0.500	ND	108 80-120	1	20	

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Patty Mata
Project Manager

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Geomatrix-Corona
250 East Rincon Street, Suite 204
Corona, CA 92879
Attention: Rick Rees

Project ID: Aerojet Azusa
007190.004.1 7
Report Number: IPB1266

Sampled: 02/13/06
Received: 02/13/06

DATA QUALIFIERS AND DEFINITIONS

ND Analyte NOT DETECTED at or above the reporting limit or MDL, if MDL is specified.
RPD Relative Percent Difference

Del Mar Analytical, Irvine
Patty Mata
Project Manager

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Geomatrix-Corona
250 East Rincon Street, Suite 204
Corona, CA 92879
Attention: Rick Rees

Project ID: Aerojet Azusa
007190.004.1.7
Report Number: IPB1266

Sampled: 02/13/06
Received: 02/13/06

Certification Summary

Del Mar Analytical, Irvine

Method	Matrix	Nelac	California
EPA 314.0 MOD.	Soil	N/A	N/A

Nevada and NELAP provide analyte specific accreditations. Analyte specific information for Del Mar Analytical may be obtained by contacting the laboratory or visiting our website at www.dmalabs.com.

Del Mar Analytical, Irvine
Patty Mata
Project Manager

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IPB1266 <Page 5 of 5>

CHAIN-OF-CUSTODY RECORD

1003


4/13/06

COR 10112


PROJECT NAME: AEROJET-AISA PERKINELMER AOC				DATE: 2/10/06		PAGE: 21 OF 2	
PROJECT NUMBER: 7190,004 1.7		LABORATORY NAME: DEL MAR		CLIENT INFORMATION: AEROJET AISA		REPORTING REQUIREMENTS	
RESULTS TO: G. RICHARD REES		LABORATORY ADDRESS: 17461 DEXIAN STE100					
TURNAROUND TIME: STANDARD		IRVINE CA 92614				IPB1266	
SAMPLE SHIPMENT METHOD: COURIER		LABORATORY CONTACT: PATTE MATA		LABORATORY PHONE NUMBER: 949-261-1022		GEOTRACKER REQUIRED: YES <input checked="" type="checkbox"/> NO <input type="checkbox"/>	
						SITE SPECIFIC GLOBAL ID NO	

SAMPLERS (SIGNATURE):			ANALYSES										CONTAINER TYPE AND SIZE		Soil (S), Water (W), Vapor (V), or Other (O)	Filtered	Preservative Type	Cooled	MS/MSD	No. of Containers	ADDITIONAL COMMENTS
DATE	TIME	SAMPLE NUMBER	EPA 314	1 WK TURNAROUND																	
2/13/06	9:21	PS2B-66-6	X											GLASS 403	S			X		1	
2/13/06	9:25	PS2B-66-7.5	X											" "	S			X		1	
2/13/06	9:35	PS2B-66-10	X											" "	S			X		1	
2/13/06	9:50	PS2B-66-15	X											" "	S			X		1	
2/13/06	10:09	PS2B-66-20	X											" "	S			X		1	
2/13/06	12:29	PS2B-66-25	X											" "	S			X		1	
2/13/06	12:39	PS2B-66-30	X	X										" "	S			X		1	1WK TURNAROUND
2/13/06	12:47	PS2B-66-35	X	X										" "	S			X		1	1WK TURNAROUND
2/13/06	12:53	PS2B-66-40	X	X										" "	S			X		1	1WK TURNAROUND
2/13/06	14:33	PS2B-67-7.5	X											" "	S			X		1	
2/13/06	14:39	PS2B-67-10	X											" "	S			X		1	
2/13/06	14:51	PS2B-67-15	X											" "	S			X		1	
2/13/06	15:02	PS2B-67-20	X											" "	S			X		1	NAM
2/13/06	15:22	PS2B-67-25	X											" "	S			X		1	
2/13/06	15:35	PS2B-67-30	X											" "	S			X		1	

RELINQUISHED BY:		DATE	TIME	RECEIVED BY:		DATE	TIME	TOTAL NUMBER OF CONTAINERS: 15	
SIGNATURE: <i>Kurt Zeller</i>		2/13/06	15:00	SIGNATURE: <i>Emilio Reyes</i>		2/13/06	16:00	SAMPLING COMMENTS: 1WK TURNAROUND - PLEASE MAKE 5-DAY TURNAROUND	
PRINTED NAME: KURT ZELLER				PRINTED NAME: Emilio Reyes					
COMPANY: GEOMATRIX				COMPANY: DEL MAR AN					
SIGNATURE: <i>Emilio Reyes</i>				SIGNATURE: <i>DMX1</i>					
PRINTED NAME: Emilio Reyes		2/13/06	17:30	PRINTED NAME: DMX1		2/13/06	16:00		
COMPANY: DEL MAR AN				COMPANY: DMX1					
SIGNATURE: <i>DMX1</i>				SIGNATURE: <i>DMX1</i>					
PRINTED NAME: <i>DMX1</i>				PRINTED NAME: <i>DMX1</i>					
COMPANY: <i>DMX1</i>				COMPANY: <i>DMX1</i>					

250 East Rincon Street, Suite 204 Corona, California 92879-1363 Tel 951.273.7400 Fax 951.273.7420		 Geomatrix
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COR 10113

PROJECT NAME: AEROJET-AISA		PERKINELMER AOC		DATE: 2/13/06		PAGE 2 OF 2						
PROJECT NUMBER: 7190.004 1.7		LABORATORY NAME: DEL MAR		CLIENT INFORMATION: AEROJET-AISA		REPORTING REQUIREMENTS						
RESULTS TO: G. RICHARD REES		LABORATORY ADDRESS: 17461 DERTAN STE 100										
TURNAROUND TIME: STANDARD 5 DAY		IRVINE CA 92614										
SAMPLE SHIPMENT METHOD: COURIER		LABORATORY CONTACT: PATTI MATA		GEOTRACKER REQUIRED: YES		NO						
		LABORATORY PHONE NUMBER: 949-261-1022		SITE SPECIFIC GLOBAL ID NO								
SAMPLERS (SIGNATURE):		ANALYSES										
K. J. [Signature]												
DATE	TIME	SAMPLE NUMBER	EPA 314	5 DAY TURNAROUND	CONTAINER TYPE AND SIZE	Soil (S), Water (W), Vapor (V), or Other (O)	Filtered	Preservative Type	Cooled	MS/MSD	No. of Containers	ADDITIONAL COMMENTS
2/13/06	15:41	PS2B-67-35	X	X	GLASS 4 OZ	S			X		1	5 DAY TURNAROUND
2/13/06	15:44	PS2B-67-40	X	X	" "	S			X		1	5 DAY TURNAROUND
[Large X across the table]												
RELINQUISHED BY:		DATE	TIME	RECEIVED BY:		DATE	TIME	TOTAL NUMBER OF CONTAINERS: 2				
SIGNATURE: [Signature]		2/13/06	16:00	SIGNATURE: [Signature]		2/13/06	16:05	SAMPLING COMMENTS				
PRINTED NAME: KURT ZIEGLER				PRINTED NAME: Emilio Rees								
COMPANY: GEOMATRIX				COMPANY: DEL MAR A.O.C.								
SIGNATURE: [Signature]		2/13/06	17:30	SIGNATURE: [Signature]		2/13/06	16:00					
PRINTED NAME: Emilio Rees				PRINTED NAME: [Signature]								
COMPANY: DEL MAR A.O.C.				COMPANY: [Signature]								
SIGNATURE:				SIGNATURE:								
PRINTED NAME:				PRINTED NAME:								
COMPANY:				COMPANY:								
								250 East Rincon Street, Suite 204 Corona, California 92879-1363 Tel 951.273.7400 Fax 951.273.7420		 Geomatrix		

LABORATORY REPORT

Prepared For: Geomatrix-Corona
250 East Rincon Street, Suite 204
Corona, CA 92879
Attention: Rick Rees

Project: Aerojet Azusa
007190.004.1.7

Sampled: 02/09/06-02/10/06
Received: 02/10/06
Issued: 02/24/06 16:43

NELAP #01108CA California ELAP#1197 CSDLAC #10117

The results listed within this Laboratory Report pertain only to the samples tested in the laboratory. The analyses contained in this report were performed in accordance with the applicable certifications as noted. All soil samples are reported on a wet weight basis unless otherwise noted in the report. This Laboratory Report is confidential and is intended for the sole use of Del Mar Analytical and its client. This report shall not be reproduced, except in full, without written permission from Del Mar Analytical. The Chain of Custody, 1 page, is included and is an integral part of this report.

This entire report was reviewed and approved for release

CASE NARRATIVE

SAMPLE RECEIPT: Samples were received intact, at 5°C, on ice and with chain of custody documentation.

HOLDING TIMES: All samples were analyzed within prescribed holding times and/or in accordance with the Del Mar Analytical Sample Acceptance Policy unless otherwise noted in the report.

PRESERVATION: Samples requiring preservation were verified prior to sample analysis.

QA/QC CRITERIA: All analyses met method criteria, except as noted in the report with data qualifiers.

COMMENTS: No significant observations were made.

SUBCONTRACTED: No analyses were subcontracted to an outside laboratory.

LABORATORY ID	CLIENT ID	MATRIX
IPB1078-01	PSZB-58-5	Soil
IPB1078-02	PSZB-58-2.5	Soil
IPB1078-03	PSZB-58-1	Soil
IPB1078-04	PSZB-62-30	Soil
IPB1078-05	PSZB-62-35	Soil
IPB1078-06	PSZB-62-40	Soil
IPB1078-07	PSZB-61-6	Soil
IPB1078-08	PSZB-61-7.5	Soil
IPB1078-09	PSZB-61-10	Soil
IPB1078-10	PSZB-61-15	Soil
IPB1078-11	PSZB-61-20	Soil

Del Mar Analytical, Irvine
Patty Mata
Project Manager



Del Mar Analytical

17461 Denian Ave., Suite 100, Irvine, CA 92614 (949) 261-1022 FAX (949) 260-3297
1014 E Cooley Dr., Suite A, Colton, CA 92324 (909) 370-4667 FAX (909) 370-1046
9830 South 51st St., Suite B-120, Phoenix, AZ 85044 (480) 785-0043 FAX (480) 785-0851
2520 E Sunset Rd. #3, Las Vegas, NV 89120 (702) 798-3620 FAX (702) 798-3621

Geomatrix-Corona
250 East Rincon Street, Suite 204
Corona, CA 92879
Attention: Rick Rees

Project ID: Aerojet Azusa
007190.004.1.7
Report Number: IPB1078

Sampled: 02/09/06-02/10/06
Received: 02/10/06

LABORATORY ID

IPB1078-12
IPB1078-13
IPB1078-14
IPB1078-15

CLIENT ID

PSZB-61-25
PSZB-61-30
PSZB-61-35
PSZB-61-40

MATRIX

Soil
Soil
Soil
Soil

Reviewed By:

Del Mar Analytical, Irvine
Patty Mata
Project Manager

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IPB1078 <Page 2 of 7>



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Geomatrix-Corona
250 East Rincon Street, Suite 204
Corona, CA 92879
Attention: Rick Rees

Project ID: Aerojet Azusa
007190.004.1.7
Report Number: IPB1078

Sampled: 02/09/06-02/10/06
Received: 02/10/06

INORGANICS

Analyte	Method	Batch	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IPB1078-01 (PSZB-58-5 - Soil)				Sampled: 02/09/06				
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	6B14119	0.040	0.94	0.998	2/14/2006	2/15/2006	
Sample ID: IPB1078-02 (PSZB-58-2.5 - Soil)				Sampled: 02/09/06				
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	6B14119	0.20	1.8	4.99	2/14/2006	2/16/2006	
Sample ID: IPB1078-03 (PSZB-58-1 - Soil)				Sampled: 02/09/06				
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	6B14119	0.20	0.99	4.98	2/14/2006	2/16/2006	
Sample ID: IPB1078-04 (PSZB-62-30 - Soil)				Sampled: 02/10/06				
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	6B14119	0.040	ND	0.998	2/14/2006	2/15/2006	
Sample ID: IPB1078-05 (PSZB-62-35 - Soil)				Sampled: 02/10/06				
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	6B14119	0.040	ND	0.998	2/14/2006	2/15/2006	
Sample ID: IPB1078-06 (PSZB-62-40 - Soil)				Sampled: 02/10/06				
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	6B14119	0.040	ND	0.998	2/14/2006	2/15/2006	
Sample ID: IPB1078-07 (PSZB-61-6 - Soil)				Sampled: 02/10/06				
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	6B14119	0.040	0.067	0.998	2/14/2006	2/15/2006	
Sample ID: IPB1078-08 (PSZB-61-7.5 - Soil)				Sampled: 02/10/06				
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	6B15144	0.040	0.084	0.998	2/15/2006	2/16/2006	M1
Sample ID: IPB1078-09 (PSZB-61-10 - Soil)				Sampled: 02/10/06				
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	6B15144	0.040	ND	1	2/15/2006	2/16/2006	
Sample ID: IPB1078-10 (PSZB-61-15 - Soil)				Sampled: 02/10/06				
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	6B15144	0.040	ND	0.998	2/15/2006	2/16/2006	

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Patty Mata
Project Manager

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Geomatrix-Corona
250 East Rincon Street, Suite 204
Corona, CA 92879
Attention: Rick Rees

Project ID: Aerojet Azusa
007190.004.1.7
Report Number: IPB1078

Sampled: 02/09/06-02/10/06
Received: 02/10/06

INORGANICS

Analyte	Method	Batch	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IPB1078-11 (PSZB-61-20 - Soil)				Sampled: 02/10/06				
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	6B15144	0.040	ND	0.993	2/15/2006	2/16/2006	
Sample ID: IPB1078-12 (PSZB-61-25 - Soil)				Sampled: 02/10/06				
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	6B15144	0.040	ND	0.998	2/15/2006	2/16/2006	
Sample ID: IPB1078-13 (PSZB-61-30 - Soil)				Sampled: 02/10/06				
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	6B15144	0.040	ND	0.998	2/15/2006	2/16/2006	
Sample ID: IPB1078-14 (PSZB-61-35 - Soil)				Sampled: 02/10/06				
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	6B15144	0.040	ND	0.995	2/15/2006	2/16/2006	
Sample ID: IPB1078-15 (PSZB-61-40 - Soil)				Sampled: 02/10/06				
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	6B15144	0.040	ND	0.998	2/15/2006	2/16/2006	

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Project Manager

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Corona, CA 92879
Attention: Rick Rees

Project ID: Aerojet Azusa
007190.004.1.7
Report Number: IPB1078

Sampled: 02/09/06-02/10/06
Received: 02/10/06

METHOD BLANK/QC DATA

INORGANICS

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 6B14119 Extracted: 02/14/06										
Blank Analyzed: 02/14/2006 (6B14119-BLK1)										
Perchlorate	ND	0.040	mg/kg							
LCS Analyzed: 02/14/2006 (6B14119-BS1)										
Perchlorate	0.510	0.040	mg/kg	0.500		102	85-115			
Matrix Spike Analyzed: 02/14/2006 (6B14119-MS1)										
Perchlorate	0.710	0.040	mg/kg	0.499	0.14	114	80-120			
Matrix Spike Dup Analyzed: 02/14/2006 (6B14119-MSD1)										
Perchlorate	0.699	0.040	mg/kg	0.499	0.14	112	80-120	2	20	
Batch: 6B15144 Extracted: 02/15/06										
Blank Analyzed: 02/16/2006 (6B15144-BLK1)										
Perchlorate	ND	0.040	mg/kg							
LCS Analyzed: 02/16/2006 (6B15144-BS1)										
Perchlorate	0.535	0.040	mg/kg	0.500		107	85-115			
Matrix Spike Analyzed: 02/16/2006 (6B15144-MS1)										
Perchlorate	0.771	0.040	mg/kg	0.499	0.084	138	80-120			MI
Matrix Spike Dup Analyzed: 02/16/2006 (6B15144-MSD1)										
Perchlorate	0.698	0.040	mg/kg	0.499	0.084	123	80-120	10	20	MI

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Patty Mata
Project Manager

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Geomatrix-Corona
250 East Rincon Street, Suite 204
Corona, CA 92879
Attention: Rick Rees

Project ID: Aerojet Azusa
007190.004.1.7
Report Number: IPB1078

Sampled: 02/09/06-02/10/06
Received: 02/10/06

DATA QUALIFIERS AND DEFINITIONS

- M1** The MS and/or MSD were above the acceptance limits due to sample matrix interference. See Blank Spike (LCS).
ND Analyte NOT DETECTED at or above the reporting limit or MDL, if MDL is specified.
RPD Relative Percent Difference

Del Mar Analytical, Irvine
Patty Mata
Project Manager

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Geomatrix-Corona
250 East Rincon Street, Suite 204
Corona, CA 92879
Attention: Rick Rees

Project ID: Aerojet Azusa
007190.004.1.7
Report Number: IPB1078

Sampled: 02/09/06-02/10/06
Received: 02/10/06

Certification Summary

Del Mar Analytical, Irvine

Method	Matrix	Nelap	California
EPA 314.0 MOD.	Soil	N/A	N/A

Nevada and NELAP provide analyte specific accreditations. Analyte specific information for Del Mar Analytical may be obtained by contacting the laboratory or visiting our website at www.testamericainc.com

Del Mar Analytical, Irvine
Patty Mata
Project Manager

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IPB1078 <Page 7 of 7>

CHAIN-OF-CUSTODY RECORD

FBI 10/18

2/10/06

COR 10111

PROJECT NAME: AEROJET-AISA PERKINELMER AOC			DATE: 2/10/06		PAGE 1 OF 1			
PROJECT NUMBER: 7190.004 1.7			LABORATORY NAME: DELMAN		CLIENT INFORMATION: AEROJET-AISA			
RESULTS TO: G. RICHARD REES			LABORATORY ADDRESS: 17461 DERIAN STE 100		REPORTING REQUIREMENTS			
TURNAROUND TIME: STANDARD			IRVINE CA 92614					
SAMPLE SHIPMENT METHOD: COURIER			LABORATORY CONTACT: PATTI MATA		GEOTRACKER REQUIRED: YES (NO)			
			LABORATORY PHONE NUMBER: 949-261-1022		SITE SPECIFIC GLOBAL ID NO			
SAMPLERS (SIGNATURE): <i>Rutger</i>			ANALYSES					
DATE	TIME	SAMPLE NUMBER	EPA 314		CONTAINER TYPE AND SIZE	Soil (S), Water (W), Vapor (V), or Other (O)		
2/9/06	16:45	PS2B-58-5	X		GLASS 40Z	S		
2/7/06	16:48	PS2B-58-2.5	X		" "	S		
2/9/06	16:51	PS2B-58-1	X		" "	S		
2/10/06	7:33	PS2B-62-30	X		" "	S		
2/10/06	7:41	PS2B-62-35	X		" "	S		
2/10/06	7:44	PS2B-62-40	X		" "	S		
2/10/06	9:34	PS2B-61-6	X		" "	S		
2/10/06	9:35	PS2B-61-7.5	X		" "	S		
2/10/06	9:42	PS2B-61-10	X		" "	S		
2/10/06	10:06	PS2B-61-15	X		" "	S		
2/10/06	10:18	PS2B-61-20	X		" "	S		
2/10/06	10:29	PS2B-61-25	X		" "	S		
2/10/06	10:42	PS2B-61-30	X		" "	S		
2/10/06	10:57	PS2B-61-35	X		" "	S		
2/10/06	11:24	PS2B-61-40	X		" "	S		
RELINQUISHED BY:		DATE	TIME	RECEIVED BY:		DATE	TIME	TOTAL NUMBER OF CONTAINERS: 15
SIGNATURE: <i>Rutger</i>		2/10/06	16:53	SIGNATURE: <i>Michelle Cronch</i>		2/10/06	16:53	SAMPLING COMMENTS:
PRINTED NAME: KURT R REISER				PRINTED NAME: Michelle Cronch				
COMPANY: GEOMATRIX		2/10/06	1:53	SIGNATURE: <i>Del Mar</i>		2/10/06	1:50	250 East Rincon Street, Suite 204 Corona, California 92879-1363 Tel 951.273.7400 Fax 951.273.7420
SIGNATURE: <i>Del Mar</i>				PRINTED NAME: Del Mar				
PRINTED NAME: Del Mar				COMPANY: Geomatrix				
COMPANY: Geomatrix								

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(E)



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LABORATORY REPORT

Prepared For: Geomatrix-Corona
250 East Rincon Street, Suite 204
Corona, CA 92879
Attention: Rick Rees

Project: Aerojet Azusa
007190.004.1.7

Sampled: 02/13/06
Received: 02/13/06
Issued: 02/28/06 13:32

NELAP #01108CA California ELAP#1197 CSDLAC #10117

*The results listed within this Laboratory Report pertain only to the samples tested in the laboratory. The analyses contained in this report were performed in accordance with the applicable certifications as noted. All soil samples are reported on a wet weight basis unless otherwise noted in the report. This Laboratory Report is confidential and is intended for the sole use of Del Mar Analytical and its client. This report shall not be reproduced, except in full, without written permission from Del Mar Analytical. The Chain(s) of Custody, 2 pages, are included and are an integral part of this report.
This entire report was reviewed and approved for release*

CASE NARRATIVE

SAMPLE RECEIPT: Samples were received intact, at 5°C, on ice and with chain of custody documentation.

HOLDING TIMES: All samples were analyzed within prescribed holding times and/or in accordance with the Del Mar Analytical Sample Acceptance Policy unless otherwise noted in the report.

PRESERVATION: Samples requiring preservation were verified prior to sample analysis

QA/QC CRITERIA: All analyses met method criteria, except as noted in the report with data qualifiers.

COMMENTS: Only the normal TAT perchlorate sample results are included in this report. All rush results were sent 2/20/06.

SUBCONTRACTED: No analyses were subcontracted to an outside laboratory.

LABORATORY ID	CLIENT ID	MATRIX
IPB1266-01	PSZB-66-6	Soil
IPB1266-02	PSZB-66-7.5	Soil
IPB1266-03	PSZB-66-10	Soil
IPB1266-04	PSZB-66-15	Soil
IPB1266-05	PSZB-66-20	Soil
IPB1266-06	PSZB-66-25	Soil
IPB1266-10	PSZB-67-7.5	Soil
IPB1266-11	PSZB-67-10	Soil
IPB1266-12	PSZB-67-15	Soil
IPB1266-13	PSZB-67-20	Soil

Del Mar Analytical, Irvine
Michèle Chamberlin For Patty Mata
Project Manager



Del Mar Analytical

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2520 E. Sunset Rd #3, Las Vegas, NV 89120 (702) 798-3620 FAX (702) 798-3621

Geomatrix-Corona
250 East Rincon Street, Suite 204
Corona, CA 92879
Attention: Rick Rees

Project ID: Aerojet Azusa
007190.004.1.7
Report Number: IPB1266

Sampled: 02/13/06
Received: 02/13/06

LABORATORY ID

IPB1266-14

IPB1266-15

CLIENT ID

PSZB-67-25

PSZB-67-30

MATRIX

Soil

Soil

Reviewed By:

Michele Chamberlin

Del Mar Analytical, Irvine
Michele Chamberlin For Patty Mata
Project Manager

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Geomatrix-Corona
250 East Rincon Street, Suite 204
Corona, CA 92879
Attention: Rick Rees

Project ID: Aerojet Azusa
007190.004.1.7
Report Number: IPB1266

Sampled: 02/13/06
Received: 02/13/06

INORGANICS

Analyte	Method	Batch	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IPB1266-01 (PSZB-66-6 - Soil)								
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	6B16138	0.040	ND	0.998	2/16/2006	2/17/2006	
Sample ID: IPB1266-02 (PSZB-66-7.5 - Soil)								
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	6B16138	0.040	ND	0.998	2/16/2006	2/17/2006	
Sample ID: IPB1266-03 (PSZB-66-10 - Soil)								
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	6B16138	0.040	ND	0.998	2/16/2006	2/17/2006	
Sample ID: IPB1266-04 (PSZB-66-15 - Soil)								
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	6B16138	0.040	ND	0.998	2/16/2006	2/17/2006	
Sample ID: IPB1266-05 (PSZB-66-20 - Soil)								
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	6B16138	0.040	ND	1	2/16/2006	2/20/2006	
Sample ID: IPB1266-06 (PSZB-66-25 - Soil)								
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	6B16138	0.040	ND	0.995	2/16/2006	2/17/2006	
Sample ID: IPB1266-10 (PSZB-67-7.5 - Soil)								
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	6B16138	0.040	ND	0.995	2/16/2006	2/17/2006	
Sample ID: IPB1266-11 (PSZB-67-10 - Soil)								
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	6B16138	0.040	ND	1	2/16/2006	2/17/2006	
Sample ID: IPB1266-12 (PSZB-67-15 - Soil)								
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	6B16138	0.040	ND	0.998	2/16/2006	2/17/2006	
Sample ID: IPB1266-13 (PSZB-67-20 - Soil)								
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	6B16138	0.040	ND	1	2/16/2006	2/17/2006	

Del Mar Analytical, Irvine
Michele Chamberlin For Patty Mata
Project Manager

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IPB1266 Page 3 of 7



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Geomatrix-Corona
250 East Rincon Street, Suite 204
Corona, CA 92879
Attention: Rick Rees

Project ID: Aerojet Azusa
007190.004.1.7
Report Number: IPB1266

Sampled: 02/13/06
Received: 02/13/06

INORGANICS

Analyte	Method	Batch	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IPB1266-14 (PSZB-67-25 - Soil)								
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	6B16138	0.040	ND	1	2/16/2006	2/17/2006	
Sample ID: IPB1266-15 (PSZB-67-30 - Soil)								
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	6B16138	0.040	ND	1	2/16/2006	2/17/2006	

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Project Manager

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Geomatrix-Corona
250 East Rincon Street, Suite 204
Corona, CA 92879
Attention: Rick Rees

Project ID: Aerojet Azusa
007190.004.1.7
Report Number: IPB1266

Sampled: 02/13/06
Received: 02/13/06

METHOD BLANK/QC DATA

INORGANICS

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 6B16138 Extracted: 02/16/06									
Blank Analyzed: 02/20/2006 (6B16138-BLK1)									
Perchlorate	ND	0.040	mg/kg						
LCS Analyzed: 02/17/2006 (6B16138-BS1)									
Perchlorate	0.539	0.040	mg/kg	0.500		108 85-115			
Matrix Spike Analyzed: 02/17/2006 (6B16138-MS1)									
Perchlorate	0.523	0.040	mg/kg	0.499	ND	105 80-120			
Matrix Spike Dup Analyzed: 02/17/2006 (6B16138-MSD1)									
Perchlorate	0.523	0.040	mg/kg	0.499	ND	105 80-120	0	20	

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Geomatrix-Corona
250 East Rincon Street, Suite 204
Corona, CA 92879
Attention: Rick Rees

Project ID: Aerojet Azusa
007190.004.1.7
Report Number: IPB1266

Sampled: 02/13/06
Received: 02/13/06

DATA QUALIFIERS AND DEFINITIONS

ND Analyte NOT DETECTED at or above the reporting limit or MDL, if MDL is specified.
RPD Relative Percent Difference

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Michele Chamberlin For Patty Mata
Project Manager

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Geomatrix-Corona
250 East Rincon Street, Suite 204
Corona, CA 92879
Attention: Rick Rees

Project ID: Aerojet Azusa
007190.004.1.7
Report Number: IPB1266

Sampled: 02/13/06
Received: 02/13/06

Certification Summary

Del Mar Analytical, Irvine

Method	Matrix	Nelac	California
EPA 314.0 MOD.	Soil	N/A	N/A

Nevada and NELAP provide analyte specific accreditations. Analyte specific information for Del Mar Analytical may be obtained by contacting the laboratory or visiting our website at www.testamericainc.com

Del Mar Analytical, Irvine
Michele Chamberlin For Patty Mata
Project Manager

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IPB1266 <Page 7 of 7>

CHAIN-OF-CUSTODY RECORD


4/13/06 COR 10112

PROJECT NAME: AEROJET-AISA PERKINELMER AOC			DATE: 2/10/06		PAGE 21 OF 2	
PROJECT NUMBER 7190.004 1.7			LABORATORY NAME DEL MAR		CLIENT INFORMATION AEROJET AISA	
RESULTS TO G. RICHARD REES			LABORATORY ADDRESS 17461 DEXIAN STE 100		REPORTING REQUIREMENTS	
TURNAROUND TIME STANDARD			IRVINE CA 92614		IPB1266	
SAMPLE SHIPMENT METHOD COURIER			LABORATORY CONTACT PATTE MATA		GEOTRACKER REQUIRED YES <input checked="" type="checkbox"/>	
			LABORATORY PHONE NUMBER 949-261-1022		SITE SPECIFIC GLOBAL ID NO	

SAMPLERS (SIGNATURE):			ANALYSES										CONTAINER TYPE AND SIZE		Soil (S), Water (W), Vapor (V), or Other (O)	Filtered	Preservative Type	Cooled	MS/MSD	No. of Containers	ADDITIONAL COMMENTS
DATE	TIME	SAMPLE NUMBER	EPA 314	1 WK TURNAROUND																	
2/13/06	9:21	PS2B-66-6	X										GLASS 40Z	S			X		1		
2/13/06	9:25	PS2B-66-7.5	X										" "	S			X		1		
2/13/06	9:35	PS2B-66-10	X										" "	S			X		1		
2/13/06	9:50	PS2B-66-15	X										" "	S			X		1		
2/13/06	10:09	PS2B-66-20	X										" "	S			X		1		
2/13/06	12:29	PS2B-66-25	X										" "	S			X		1		
2/13/06	12:39	PS2B-66-30	X	X									" "	S			X		1	1WK TURNAROUND	
2/13/06	12:47	PS2B-66-35	X	X									" "	S			X		1	1WK TURNAROUND	
2/13/06	12:53	PS2B-66-40	X	X									" "	S			X		1	1WK TURNAROUND	
2/13/06	14:33	PS2B-67-7.5	X										" "	S			X		1		
2/13/06	14:39	PS2B-67-10	X										" "	S			X		1		
2/13/06	14:51	PS2B-67-15	X										" "	S			X		1		
2/13/06	15:02	PS2B-67-20	X										" "	S			X		1	NAM	
2/13/06	15:22	PS2B-67-25	X										" "	S			X		1		
2/13/06	15:35	PS2B-67-30	X										" "	S			X		1		

RELINQUISHED BY:		DATE	TIME	RECEIVED BY:		DATE	TIME	TOTAL NUMBER OF CONTAINERS: 15	
SIGNATURE: <i>Kurt Zeller</i>		2/13/06	16:00	SIGNATURE: <i>Emilio Reyes</i>		2/13/06	16:00	SAMPLING COMMENTS: 1WK TURNAROUND - PLEASE MAKE	
PRINTED NAME: KURT ZELLER				PRINTED NAME: Emilio Reyes				5-DAY TURNAROUND	
COMPANY: GEOMATRIX				COMPANY: DELMAR AN					
SIGNATURE: <i>Emilio Reyes</i>		02/13/06	17:30	SIGNATURE: <i>DMX1</i>		2/13/06	16:00		
PRINTED NAME: Emilio Reyes				PRINTED NAME: DMX1					
COMPANY: DELMAR AN				COMPANY: DMX1					
SIGNATURE: <i>DMX1</i>				SIGNATURE: <i>SC</i>					
PRINTED NAME: <i>DMX1</i>				PRINTED NAME: <i>SC</i>					
COMPANY: <i>DMX1</i>				COMPANY: <i>SC</i>					

250 East Rincon Street, Suite 204
Corona, California 92879-1363
Tel 951.273.7400 Fax 951.273.7420



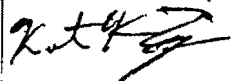
Geomatrix

CHAIN-OF-CUSTODY RECORD

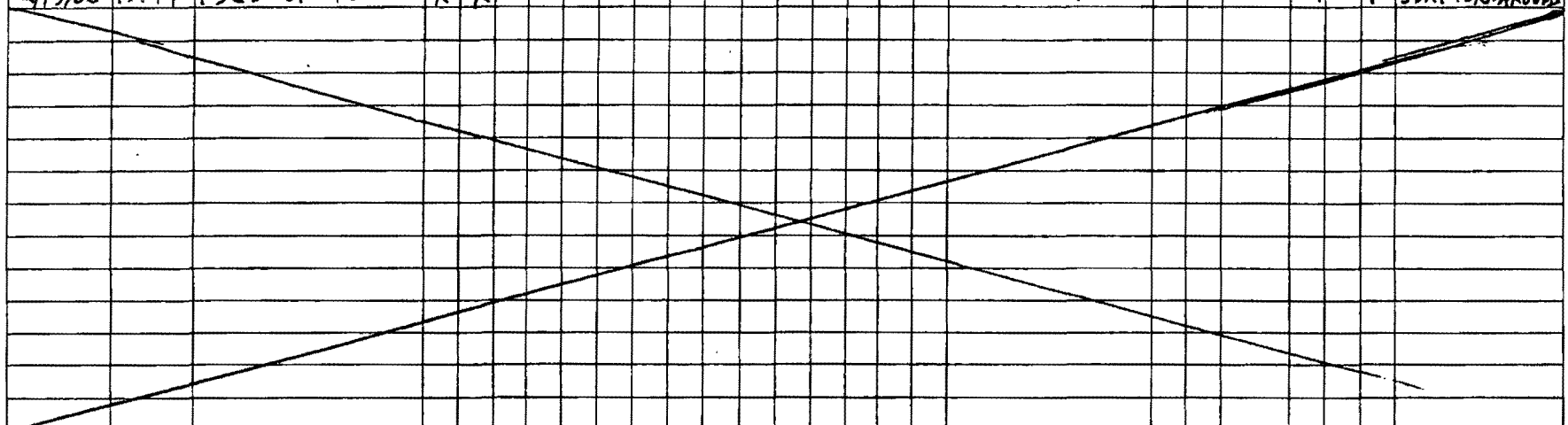
COR 10113

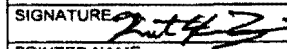
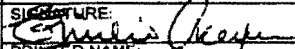
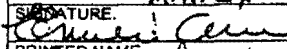
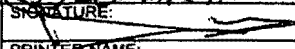
PROJECT NAME: AEROJET-AISA PERKINELMER AOC		DATE: 2/13/06	PAGE 2 OF 2
PROJECT NUMBER: 7190.004 1.7	LABORATORY NAME: DELMAN	CLIENT INFORMATION: AEROJET-AISA	
RESULTS TO: G. RICHARD REES	LABORATORY ADDRESS: 1461 DEXTER STE 100	REPORTING REQUIREMENTS	
TURNAROUND TIME: STANDARD 5 DAY	IRVINE CA 92614		
SAMPLE SHIPMENT METHOD: COURIER	LABORATORY CONTACT: PATTE MATA	GEOTRACKER REQUIRED: YES <input checked="" type="checkbox"/>	
	LABORATORY PHONE NUMBER: 449-261-1033	SITE SPECIFIC GLOBAL ID NO	

SAMPLERS (SIGNATURE):



ANALYSES

DATE	TIME	SAMPLE NUMBER	EPA 314	5 DAY TURNAROUND	CONTAINER TYPE AND SIZE	Soil (S), Water (W), Vapor (V), or Other (O)	Filtered	Preservative Type	Cooled	MS/MSD	No of Containers	ADDITIONAL COMMENTS
15/11/06	15:41	PS2B-67-35	X	X	GLASS 40Z	S			X		1	5 DAY TURNAROUND
2/13/06	15:44	PS2B-67-40	X	X	" "	S			X		1	5 DAY TURNAROUND
												

RELINQUISHED BY:	DATE	TIME	RECEIVED BY:	DATE	TIME	TOTAL NUMBER OF CONTAINERS: 2
SIGNATURE: 	2/13/06	16:00	SIGNATURE: 	2/13/06	16:00	SAMPLING COMMENTS
PRINTED NAME: KURT ZELLER			PRINTED NAME: Emilio Reyes			
COMPANY: GEOMATRIX			COMPANY: DELMAN AOC			
SIGNATURE: 	2/13/06	17:30	SIGNATURE: 	2/14/06	16:00	
PRINTED NAME: Emilio Reyes			PRINTED NAME: Kurt Zeller			
COMPANY: DELMAN AOC			COMPANY: DELMAN			
SIGNATURE:			SIGNATURE:			
PRINTED NAME:			PRINTED NAME:			
COMPANY:			COMPANY:			

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Geomatrix



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LABORATORY REPORT

Prepared For: Geomatrix-Corona
250 East Rincon Street, Suite 204
Corona, CA 92879
Attention: Rick Rees

Project: Aerojet Azusa
007190.004.1.7

Sampled: 02/14/06
Received: 02/14/06
Issued: 03/16/06 17:00

NELAP #01108CA California ELAP#1197 CSDLAC #10117

The results listed within this Laboratory Report pertain only to the samples tested in the laboratory. The analyses contained in this report were performed in accordance with the applicable certifications as noted. All soil samples are reported on a wet weight basis unless otherwise noted in the report. This Laboratory Report is confidential and is intended for the sole use of Del Mar Analytical and its client. This report shall not be reproduced, except in full, without written permission from Del Mar Analytical. The Chain(s) of Custody, 2 pages, are included and are an integral part of this report. This entire report was reviewed and approved for release.

CASE NARRATIVE

SAMPLE RECEIPT: Samples were received intact, at 3°C, on ice and with chain of custody documentation. EPA 314.0 analysis of samples IPB1403-22 and -23 were requested on 3/3/06.

HOLDING TIMES: All samples were analyzed within prescribed holding times and/or in accordance with the Del Mar Analytical Sample Acceptance Policy unless otherwise noted in the report.

PRESERVATION: Samples requiring preservation were verified prior to sample analysis.

QA/QC CRITERIA: All analyses met method criteria, except as noted in the report with data qualifiers.

COMMENTS: Only the additional Perchlorate results for samples IPB1403-22 and -23 are included in this report. All other results were sent under separate cover.

SUBCONTRACTED: No analyses were subcontracted to an outside laboratory.

LABORATORY ID

IPB1403-22
IPB1403-23

CLIENT ID

PSZB-57-6
PSZB-57-7.5

MATRIX

Soil
Soil

Reviewed By:

Del Mar Analytical - Irvine
Patty Mata
Project Manager



Del Mar Analytical

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Geomatrix-Corona
250 East Rincon Street, Suite 204
Corona, CA 92879
Attention: Rick Rees

Project ID: Aerojet Azusa
007190.004.1.7
Report Number: IPB1403

Sampled: 02/14/06
Received: 02/14/06

INORGANICS

Analyte	Method	Batch	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IPB1403-22 (PSZB-57-6 - Soil)								
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	6C06115	2.0	10	50	3/6/2006	3/9/2006	
Sample ID: IPB1403-23 (PSZB-57-7.5 - Soil)								
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	6C06115	0.20	1.0	5.01	3/6/2006	3/9/2006	

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Patty Mata
Project Manager

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IPB1403 <Page 2 of 5>



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Geomatrix-Corona
250 East Rincon Street, Suite 204
Corona, CA 92879
Attention: Rick Rees

Project ID: Aerojet Azusa
007190.004.1.7
Report Number: IPB1403

Sampled: 02/14/06
Received: 02/14/06

METHOD BLANK/QC DATA

INORGANICS

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 6C06115 Extracted: 03/06/06									
Blank Analyzed: 03/07/2006 (6C06115-BLK1)									
Perchlorate	ND	0.040	mg/kg						
LCS Analyzed: 03/07/2006 (6C06115-BS1)									
Perchlorate	0.517	0.040	mg/kg	0.500		103 85-115			
Matrix Spike Analyzed: 03/07/2006 (6C06115-MS1)									
Perchlorate	0.589	0.040	mg/kg	0.500	0.044	109 80-120			
Matrix Spike Dup Analyzed: 03/07/2006 (6C06115-MSD1)									
Perchlorate	0.602	0.040	mg/kg	0.501	0.044	111 80-120	2	20	

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IPB1403 <Page 3 of 5>



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Geomatrix-Corona
250 East Rincon Street, Suite 204
Corona, CA 92879
Attention: Rick Rees

Project ID: Aerojet Azusa
007190.004.1.7
Report Number: IPB1403

Sampled: 02/14/06
Received: 02/14/06

DATA QUALIFIERS AND DEFINITIONS

ND Analyte NOT DETECTED at or above the reporting limit or MDL, if MDL is specified
RPD Relative Percent Difference

Del Mar Analytical - Irvine
Patty Mata
Project Manager

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IPB1403 <Page 4 of 5>



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Corona, CA 92879
Attention: Rick Rees

Project ID: Aerojet Azusa
007190.004.1.7
Report Number: IPB1403

Sampled: 02/14/06
Received: 02/14/06

Certification Summary

Del Mar Analytical - Irvine

Method	Matrix	Nelac	California
EPA 314.0 MOD.	Soil	N/A	N/A

Nevada and NELAP provide analyte specific accreditations. Analyte specific information for Del Mar Analytical may be obtained by contacting the laboratory or visiting our website at www.testamericainc.com


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IPB1403 <Page 5 of 5>

CHAIN-OF-CUSTODY RECORD

COR 10114

PROJECT NAME: AEROJET-AISA PERKIN ELMER ABC		DATE: 2/14/06		PAGE 1 OF 2								
PROJECT NUMBER: 7190.004 1.7		LABORATORY NAME: DELMAR		CLIENT INFORMATION: AEROJET-AISA								
RESULTS TO: G. RICHARD REES		LABORATORY ADDRESS: 17461 DELMAR STE 100		REPORTING REQUIREMENTS								
TURNAROUND TIME: STANDARD		LABORATORY CONTACT: PATTI MATA		IPB 1403								
SAMPLE SHIPMENT METHOD: COURIER		LABORATORY PHONE NUMBER: 949-261-1822		GEOTRACKER REQUIRED: YES <input checked="" type="checkbox"/> NO <input type="checkbox"/>								
SAMPLERS (SIGNATURE): <i>Kurt R. Zeeb</i>		ANALYSES		SITE SPECIFIC GLOBAL ID NO								
DATE	TIME	SAMPLE NUMBER	EPA 314	5 DAY TURNAROUND	CONTAINER TYPE AND SIZE	Soil (S), Water (W), Vapor (V), or Other (O)	Filtered	Preservative Type	Cooled	MS/MSD	No. of Containers	ADDITIONAL COMMENTS
2/14/06	8:13	PSZB-50-7.5	X		GLASS 40Z	S			X		1	
2/14/06	8:28	PSZB-50-10	X		" "	S			X		1	
2/14/06	8:39	PSZB-50-15	X		" "	S			X		1	
2/14/06	8:51	PSZB-50-20	X		" "	S			X		1	
2/14/06	9:11	PSZB-50-25	X		" "	S			X		1	
2/14/06	9:32	PSZB-50-30	X	X	" "	S			X		1	5 DAY TURNAROUND
2/14/06	9:39	PSZB-50-35	X	X	" "	S			X		1	5 DAY TURNAROUND
2/14/06	9:43	PSZB-50-40	X	X	" "	S			X		1	5 DAY TURNAROUND
2/14/06	9:54	PSZB-57-2.5	X		" "	S			X		1	
2/14/06	10:05	PSZB-57-1	X		" "	S			X		1	
2/14/06	11:22	PSZB-59-5	X		" "	S			X		1	
2/14/06	11:24	PSZB-59-2.5	X		" "	S			X		1	
2/14/06	11:26	PSZB-59-1	X		" "	S			X		1	
2/14/06	11:32	PSZB-51-7.5	X		" "	S			X		1	
2/14/06	11:59	PSZB-51-10	X		" "	S			X		1	
RELINQUISHED BY:		DATE	TIME	RECEIVED BY:		DATE	TIME	TOTAL NUMBER OF CONTAINERS: 15				
SIGNATURE: <i>Kurt R. Zeeb</i>		2/14/06	18:38	SIGNATURE: <i>Emilio Reyes</i>		2/14/06	18:50	SAMPLING COMMENTS				
PRINTED NAME: KURT ZEEB				PRINTED NAME: EMILIO REYES								
COMPANY: GEOMATRIX				COMPANY: DELMAR								
SIGNATURE: <i>Emilio Reyes</i>				SIGNATURE: <i>Armando Herrera</i>								
PRINTED NAME: EMILIO REYES		2/14/06	18:50	PRINTED NAME: ARMANDO HERRERA		2/14/06	18:50					
COMPANY: DELMAR				COMPANY: DELMAR								
SIGNATURE:				SIGNATURE:								
PRINTED NAME:				PRINTED NAME:				250 East Rincon Street, Suite 204 Corona, California 92879-1363 Tel 951.273.7400 Fax 951.273.7420				
COMPANY:				COMPANY:				 Geomatrix				

630

COR 10115

636



LABORATORY REPORT

Prepared For: Geomatrix-Corona
250 East Rincon Street, Suite 204
Corona, CA 92879
Attention: Rick Rees

Project: Aerojet Azusa
007190.004.1.7

Sampled: 02/14/06
Received: 02/14/06
Issued: 02/28/06 17:07

NELAP #01108CA California ELAP#1197 CSDLAC #10117

*The results listed within this Laboratory Report pertain only to the samples tested in the laboratory. The analyses contained in this report were performed in accordance with the applicable certifications as noted. All soil samples are reported on a wet weight basis unless otherwise noted in the report. This Laboratory Report is confidential and is intended for the sole use of Del Mar Analytical and its client. This report shall not be reproduced, except in full, without written permission from Del Mar Analytical. The Chain(s) of Custody, 2 pages, are included and are an integral part of this report.
This entire report was reviewed and approved for release.*

SAMPLE CROSS REFERENCE

LABORATORY ID	CLIENT ID	MATRIX
IPB1403-01	PSZB-50-7.5	Soil
IPB1403-02	PSZB-50-10	Soil
IPB1403-03	PSZB-50-15	Soil
IPB1403-04	PSZB-50-20	Soil
IPB1403-05	PSZB-50-25	Soil
IPB1403-06	PSZB-50-30	Soil
IPB1403-07	PSZB-50-35	Soil
IPB1403-08	PSZB-50-40	Soil
IPB1403-09	PSZB-57-2.5	Soil
IPB1403-10	PSZB-57-1	Soil
IPB1403-11	PSZB-59-5	Soil
IPB1403-12	PSZB-59-2.5	Soil
IPB1403-13	PSZB-59-1	Soil
IPB1403-14	PSZB-51-7.5	Soil
IPB1403-15	PSZB-51-10	Soil
IPB1403-16	PSZB-65-5	Soil
IPB1403-17	PSZB-65-2.5	Soil
IPB1403-18	PSZB-65-1	Soil
IPB1403-19	PSZB-56-5	Soil
IPB1403-20	PSZB-56-2.5	Soil
IPB1403-21	PSZB-56-1	Soil
IPB1403-24	PSZB-57-10	Soil

Reviewed By:

Del Mar Analytical, Irvine
Amy Windham For Patty Mata
Project Manager



Del Mar Analytical

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 2520 E. Sunset Rd. #3, Las Vegas, NV 89120 (702) 798-3620 FAX (702) 798-3621

Geomatrix-Corona
 250 East Rincon Street, Suite 204
 Corona, CA 92879
 Attention: Rick Rees

Project ID: Aerojet Azusa
 007190.004.1.7
 Report Number: IPB1403

Sampled: 02/14/06
 Received: 02/14/06

INORGANICS

Analyte	Method	Batch	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IPB1403-01 (PSZB-50-7.5 - Soil)								
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	6B17098	0.040	ND	0.998	2/17/2006	2/18/2006	
Sample ID: IPB1403-02 (PSZB-50-10 - Soil)								
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	6B17098	0.040	ND	0.998	2/17/2006	2/18/2006	
Sample ID: IPB1403-03 (PSZB-50-15 - Soil)								
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	6B17098	0.040	ND	0.998	2/17/2006	2/18/2006	
Sample ID: IPB1403-04 (PSZB-50-20 - Soil)								
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	6B17098	0.040	ND	0.998	2/17/2006	2/18/2006	
Sample ID: IPB1403-05 (PSZB-50-25 - Soil)								
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	6B17098	0.040	ND	0.998	2/17/2006	2/18/2006	
Sample ID: IPB1403-06 (PSZB-50-30 - Soil)								
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	6B17097	0.040	ND	0.998	2/17/2006	2/17/2006	
Sample ID: IPB1403-07 (PSZB-50-35 - Soil)								
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	6B17097	0.040	ND	0.998	2/17/2006	2/17/2006	
Sample ID: IPB1403-08 (PSZB-50-40 - Soil)								
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	6B17097	0.040	ND	0.998	2/17/2006	2/17/2006	
Sample ID: IPB1403-09 (PSZB-57-2.5 - Soil)								
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	6B17098	0.040	0.20	0.998	2/17/2006	2/18/2006	
Sample ID: IPB1403-10 (PSZB-57-1 - Soil)								
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	6B17098	0.20	1.3	4.98	2/17/2006	2/21/2006	

Del Mar Analytical, Irvine
 Amy Windham For Patty Mata
 Project Manager

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Geomatrix-Corona
250 East Rincon Street, Suite 204
Corona, CA 92879
Attention: Rick Rees

Project ID: Aerojet Azusa
007190.004.1.7
Report Number: IPB1403

Sampled: 02/14/06
Received: 02/14/06

INORGANICS

Analyte	Method	Batch	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IPB1403-11 (PSZB-59-5 - Soil)								
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	6B17098	0.040	ND	0.995	2/17/2006	2/18/2006	
Sample ID: IPB1403-12 (PSZB-59-2.5 - Soil)								
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	6B17098	0.040	0.052	1	2/17/2006	2/18/2006	
Sample ID: IPB1403-13 (PSZB-59-1 - Soil)								
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	6B17098	0.040	ND	0.998	2/17/2006	2/18/2006	
Sample ID: IPB1403-14 (PSZB-51-7.5 - Soil)								
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	6B17098	0.040	ND	0.998	2/17/2006	2/18/2006	
Sample ID: IPB1403-15 (PSZB-51-10 - Soil)								
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	6B17098	0.040	ND	0.995	2/17/2006	2/18/2006	
Sample ID: IPB1403-16 (PSZB-65-5 - Soil)								
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	6B17098	0.040	ND	0.998	2/17/2006	2/18/2006	
Sample ID: IPB1403-17 (PSZB-65-2.5 - Soil)								
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	6B17098	0.040	ND	0.995	2/17/2006	2/18/2006	
Sample ID: IPB1403-18 (PSZB-65-1 - Soil)								
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	6B17098	0.040	ND	0.998	2/17/2006	2/18/2006	
Sample ID: IPB1403-19 (PSZB-56-5 - Soil)								
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	6B17098	0.040	ND	0.995	2/17/2006	2/18/2006	
Sample ID: IPB1403-20 (PSZB-56-2.5 - Soil)								
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	6B17098	0.040	ND	0.998	2/17/2006	2/18/2006	

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Amy Windham For Patty Mata
Project Manager

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Geomatrix-Corona
250 East Rincon Street, Suite 204
Corona, CA 92879
Attention: Rick Rees

Project ID: Aerojet Azusa
007190.004.1.7
Report Number: IPB1403

Sampled: 02/14/06
Received: 02/14/06

INORGANICS

Analyte	Method	Batch	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IPB1403-21 (PSZB-56-1 - Soil)								
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	6B17098	0.040	ND	0.998	2/17/2006	2/18/2006	
Sample ID: IPB1403-24 (PSZB-57-10 - Soil)								
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	6B17098	4.0	9.9	99.8	2/17/2006	2/21/2006	

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 Attention: Rick Rees

Project ID: Aerojet Azusa
 007190.004.1.7
 Report Number: IPB1403

Sampled: 02/14/06
 Received: 02/14/06

METHOD BLANK/QC DATA

INORGANICS

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC %REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 6B17097 Extracted: 02/17/06									
Blank Analyzed: 02/17/2006 (6B17097-BLK1)									
Perchlorate	ND	0.040	mg/kg						
LCS Analyzed: 02/17/2006 (6B17097-BS1)									
Perchlorate	0.515	0.040	mg/kg	0.500		103 85-115			
Matrix Spike Analyzed: 02/17/2006 (6B17097-MS1)									
Perchlorate	0.541	0.040	mg/kg	0.499	ND	108 80-120			
Matrix Spike Dup Analyzed: 02/17/2006 (6B17097-MSD1)									
Perchlorate	0.531	0.040	mg/kg	0.499	ND	106 80-120	2	20	
Batch: 6B17098 Extracted: 02/17/06									
Blank Analyzed: 02/18/2006 (6B17098-BLK1)									
Perchlorate	ND	0.040	mg/kg						
LCS Analyzed: 02/18/2006 (6B17098-BS1)									
Perchlorate	0.520	0.040	mg/kg	0.500		104 85-115			
Matrix Spike Analyzed: 02/18/2006 (6B17098-MS1)									
Perchlorate	0.537	0.040	mg/kg	0.499	ND	108 80-120			
Matrix Spike Dup Analyzed: 02/18/2006 (6B17098-MSD1)									
Perchlorate	0.536	0.040	mg/kg	0.499	ND	107 80-120	0	20	

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 Amy Windham For Patty Mata
 Project Manager

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Geomatrix-Corona
250 East Rincon Street, Suite 204
Corona, CA 92879
Attention: Rick Rees

Project ID: Aerojet Azusa
007190.004.1.7
Report Number: IPB1403

Sampled: 02/14/06
Received: 02/14/06

DATA QUALIFIERS AND DEFINITIONS

ND Analyte NOT DETECTED at or above the reporting limit or MDL, if MDL is specified.
RPD Relative Percent Difference

Del Mar Analytical, Irvine
Amy Windham For Patty Mata
Project Manager

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Geomatrix-Corona
250 East Rincon Street, Suite 204
Corona, CA 92879
Attention: Rick Rees

Project ID: Aerojet Azusa
007190.004.1.7
Report Number: IPB1403

Sampled: 02/14/06
Received: 02/14/06

Certification Summary

Del Mar Analytical, Irvine

Method	Matrix	Nelac	California
EPA 314.0 MOD.	Soil	N/A	N/A

Nevada and NELAP provide analyte specific accreditations. Analyte specific information for Del Mar Analytical may be obtained by contacting the laboratory or visiting our website at www.testamericainc.com


Del Mar Analytical, Irvine
Amy Windham For Patty Mata
Project Manager

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IPB1403 <Page 7 of 7>

CHAIN-OF-CUSTODY RECORD

COR 10114

PROJECT NAME: AEROJET-AISA PERKIN ELMER ABC		DATE: 2/14/06		PAGE: 1 OF 2								
PROJECT NUMBER: 7190.004 1.7		LABORATORY NAME: DELMAR		CLIENT INFORMATION: AEROJET-AISA								
RESULTS TO: G. RICHARD REES		LABORATORY ADDRESS: 17461 DEERAN STE 100		REPORTING REQUIREMENTS								
TURNAROUND TIME: STANDARD		IRVINE CA 92614		IPB 1403								
SAMPLE SHIPMENT METHOD: COURIER		LABORATORY CONTACT: PATIE MATA		GEOTRACKER REQUIRED: YES <input checked="" type="checkbox"/> NO <input type="checkbox"/>								
		LABORATORY PHONE NUMBER: 949-261-1022		SITE SPECIFIC GLOBAL ID NO								
SAMPLERS (SIGNATURE): <i>Kurt Zeier</i>		ANALYSES										
DATE	TIME	SAMPLE NUMBER	EPA 314	5 DAY TURNAROUND	CONTAINER TYPE AND SIZE	Soil (S), Water (W), Vapor (V), or Other (O)	Filtered	Preservative Type	Cooled	MS/MSO	No of Containers	ADDITIONAL COMMENTS
2/14/06	8:13	PS2B-50-7.5	X		GLASS 40Z	S			X		1	
2/14/06	8:28	PS2B-50-10	X		" "	S			X		1	
2/14/06	8:39	PS2B-50-15	X		" "	S			X		1	
2/14/06	8:51	PS2B-50-20	X		" "	S			X		1	
2/14/06	9:11	PS2B-50-25	X		" "	S			X		1	
2/14/06	9:32	PS2B-50-30	X	X	" "	S			X		1	5 DAY TURNAROUND
2/14/06	9:39	PS2B-50-35	X	X	" "	S			X		1	5 DAY TURNAROUND
2/14/06	9:43	PS2B-50-40	X	X	" "	S			X		1	5 DAY TURNAROUND
2/14/06	9:54	PS2B-57-2.5	X		" "	S			X		1	
2/14/06	10:05	PS2B-57-1	X		" "	S			X		1	
2/14/06	11:22	PS2B-59-5	X		" "	S			X		1	
2/14/06	11:24	PS2B-59-2.5	X		" "	S			X		1	
2/14/06	11:26	PS2B-59-1	X		" "	S			X		1	
2/14/06	11:32	PS2B-51-7.5	X		" "	S			X		1	
2/14/06	11:59	PS2B-51-10	X		" "	S			X		1	
RELINQUISHED BY:		DATE	TIME	RECEIVED BY:		DATE	TIME	TOTAL NUMBER OF CONTAINERS		15		
SIGNATURE: <i>Kurt Zeier</i>		2/14/06	16:38	SIGNATURE: <i>Emilio Reyes</i>		2/14/06	16:38	SAMPLING COMMENTS				
PRINTED NAME: KURT ZEIER				PRINTED NAME: Emilio Reyes								
COMPANY: GEOMATRIX				COMPANY: DELMAR								
SIGNATURE: <i>Emilio Reyes</i>		2/14/06	18:50	SIGNATURE: <i>Armando Herreola</i>		2/14/06	18:50					
PRINTED NAME: Emilio Reyes				PRINTED NAME: Armando Herreola								
COMPANY: DELMAR				COMPANY: DELMAR								
SIGNATURE:				SIGNATURE:								
PRINTED NAME:				PRINTED NAME:								
COMPANY:				COMPANY:								
250 East Rincon Street, Suite 204 Corona, California 92879-1363 Tel 951.273.7400 Fax 951.273.7420								 Geomatrix				

636

COR 10115

63



Geomatrix



LABORATORY REPORT

Prepared For: Geomatrix-Corona
250 East Rincon Street, Suite 204
Corona, CA 92879
Attention: Rick Rees

Project: Aerojet Azusa
007190.004.1.7

Sampled: 02/14/06-02/15/06
Received: 02/15/06
Issued: 03/01/06 19:17

NELAP #01108CA California ELAP#1197 CSDLAC #10117

The results listed within this Laboratory Report pertain only to the samples tested in the laboratory. The analyses contained in this report were performed in accordance with the applicable certifications as noted. All soil samples are reported on a wet weight basis unless otherwise noted in the report. This Laboratory Report is confidential and is intended for the sole use of Del Mar Analytical and its client. This report shall not be reproduced, except in full, without written permission from Del Mar Analytical. The Chain(s) of Custody, 2 pages, are included and are an integral part of this report. This entire report was reviewed and approved for release

CASE NARRATIVE

SAMPLE RECEIPT: Samples were received intact, at 3°C, on ice and with chain of custody documentation.

HOLDING TIMES: All samples were analyzed within prescribed holding times and/or in accordance with the Del Mar Analytical Sample Acceptance Policy unless otherwise noted in the report.

PRESERVATION: Samples requiring preservation were verified prior to sample analysis.

QA/QC CRITERIA: All analyses met method criteria, except as noted in the report with data qualifiers.

COMMENTS:

SUBCONTRACTED: No analyses were subcontracted to an outside laboratory.

LABORATORY ID	CLIENT ID	MATRIX
IPB1537-01	PSZB-57-15	Soil
IPB1537-02	PSZB-57-20	Soil
IPB1537-03	PSZB-57-25	Soil
IPB1537-04	PSZB-57-30	Soil
IPB1537-05	PSZB-57-35	Soil
IPB1537-06	PSZB-57-40	Soil
IPB1537-07	PSZB-51A-15	Soil
IPB1537-08	PSZB-51A-20	Soil
IPB1537-09	PSZB-51A-25	Soil
IPB1537-10	PSZB-51A-30	Soil
IPB1537-11	PSZB-51A-35	Soil



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Geomatrix-Corona
250 East Rincon Street, Suite 204
Corona, CA 92879
Attention: Rick Rees

Project ID: Aerojet Azusa
007190.004.1.7
Report Number: IPB1537

Sampled: 02/14/06-02/15/06
Received: 02/15/06

LABORATORY ID	CLIENT ID	MATRIX
IPB1537-12	PSZB-51A-40	Soil
IPB1537-13	PSZB-56-7.5	Soil
IPB1537-14	PSZB-56-10	Soil
IPB1537-15	PSZB-56-15	Soil
IPB1537-16	PSZB-56-20	Soil
IPB1537-17	PSZB-56-25	Soil
IPB1537-18	PSZB-56-30	Soil
IPB1537-19	PSZB-56-35	Soil
IPB1537-20	PSZB-56-40	Soil

Reviewed By:

Del Mar Analytical, Irvine
Sushmitha Reddy For Patty Mata
Project Manager

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IPB1537 <Page 2 of 8>



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Geomatrix-Corona
250 East Rincon Street, Suite 204
Corona, CA 92879
Attention: Rick Rees

Project ID: Aerojet Azusa
007190.004.1.7
Report Number: IPB1537

Sampled: 02/14/06-02/15/06
Received: 02/15/06

INORGANICS

Analyte	Method	Batch	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IPB1537-01 (PSZB-57-15 - Soil)				Sampled: 02/14/06				
Reporting Units: ug/kg								
Perchlorate	EPA 314.0 MOD.	6B17098	40	ND	0.998	2/17/2006	2/18/2006	
Sample ID: IPB1537-02 (PSZB-57-20 - Soil)				Sampled: 02/15/06				
Reporting Units: ug/kg								
Perchlorate	EPA 314.0 MOD.	6B17100	40	ND	0.998	2/17/2006	2/18/2006	
Sample ID: IPB1537-03 (PSZB-57-25 - Soil)				Sampled: 02/15/06				
Reporting Units: ug/kg								
Perchlorate	EPA 314.0 MOD.	6B17100	40	ND	0.998	2/17/2006	2/18/2006	
Sample ID: IPB1537-04 (PSZB-57-30 - Soil)				Sampled: 02/15/06				
Reporting Units: ug/kg								
Perchlorate	EPA 314.0 MOD.	6B17097	40	ND	0.995	2/17/2006	2/17/2006	
Sample ID: IPB1537-05 (PSZB-57-35 - Soil)				Sampled: 02/15/06				
Reporting Units: ug/kg								
Perchlorate	EPA 314.0 MOD.	6B17097	40	ND	0.998	2/17/2006	2/17/2006	
Sample ID: IPB1537-06 (PSZB-57-40 - Soil)				Sampled: 02/15/06				
Reporting Units: ug/kg								
Perchlorate	EPA 314.0 MOD.	6B17097	40	ND	0.995	2/17/2006	2/17/2006	
Sample ID: IPB1537-07 (PSZB-51A-15 - Soil)				Sampled: 02/15/06				
Reporting Units: ug/kg								
Perchlorate	EPA 314.0 MOD.	6B17100	40	ND	0.998	2/17/2006	2/18/2006	
Sample ID: IPB1537-08 (PSZB-51A-20 - Soil)				Sampled: 02/15/06				
Reporting Units: ug/kg								
Perchlorate	EPA 314.0 MOD.	6B17100	40	ND	0.998	2/17/2006	2/18/2006	
Sample ID: IPB1537-09 (PSZB-51A-25 - Soil)				Sampled: 02/15/06				
Reporting Units: ug/kg								
Perchlorate	EPA 314.0 MOD.	6B17100	40	ND	0.998	2/17/2006	2/18/2006	
Sample ID: IPB1537-10 (PSZB-51A-30 - Soil)				Sampled: 02/15/06				
Reporting Units: ug/kg								
Perchlorate	EPA 314.0 MOD.	6B17097	40	ND	0.998	2/17/2006	2/18/2006	

Del Mar Analytical, Irvine
Sushmitha Reddy For Patty Mata
Project Manager

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IPB1537 <Page 3 of 8>



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2520 E. Sunset Rd. #3, Las Vegas, NV 89120 (702) 798-3620 FAX (702) 798-3621

Geomatrix-Corona
250 East Rincon Street, Suite 204
Corona, CA 92879
Attention: Rick Rees

Project ID: Aerojet Azusa
007190.004.1.7
Report Number: IPB1537

Sampled: 02/14/06-02/15/06
Received: 02/15/06

INORGANICS

Analyte	Method	Batch	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IPB1537-11 (PSZB-51A-35 - Soil)				Sampled: 02/15/06				
Reporting Units: ug/kg								
Perchlorate	EPA 314.0 MOD.	6B17097	40	ND	1	2/17/2006	2/18/2006	
Sample ID: IPB1537-12 (PSZB-51A-40 - Soil)				Sampled: 02/15/06				
Reporting Units: ug/kg								
Perchlorate	EPA 314.0 MOD.	6B17097	40	ND	0.99	2/17/2006	2/18/2006	
Sample ID: IPB1537-13 (PSZB-56-7.5 - Soil)				Sampled: 02/15/06				
Reporting Units: ug/kg								
Perchlorate	EPA 314.0 MOD.	6B17100	40	ND	0.998	2/17/2006	2/18/2006	
Sample ID: IPB1537-14 (PSZB-56-10 - Soil)				Sampled: 02/15/06				
Reporting Units: ug/kg								
Perchlorate	EPA 314.0 MOD.	6B17100	40	ND	0.995	2/17/2006	2/18/2006	
Sample ID: IPB1537-15 (PSZB-56-15 - Soil)				Sampled: 02/15/06				
Reporting Units: ug/kg								
Perchlorate	EPA 314.0 MOD.	6B17100	40	ND	0.998	2/17/2006	2/18/2006	
Sample ID: IPB1537-16 (PSZB-56-20 - Soil)				Sampled: 02/15/06				
Reporting Units: ug/kg								
Perchlorate	EPA 314.0 MOD.	6B17100	40	ND	0.998	2/17/2006	2/20/2006	
Sample ID: IPB1537-17 (PSZB-56-25 - Soil)				Sampled: 02/15/06				
Reporting Units: ug/kg								
Perchlorate	EPA 314.0 MOD.	6B17100	40	ND	0.998	2/17/2006	2/20/2006	
Sample ID: IPB1537-18 (PSZB-56-30 - Soil)				Sampled: 02/15/06				
Reporting Units: ug/kg								
Perchlorate	EPA 314.0 MOD.	6B17097	40	ND	1	2/17/2006	2/18/2006	
Sample ID: IPB1537-19 (PSZB-56-35 - Soil)				Sampled: 02/15/06				
Reporting Units: ug/kg								
Perchlorate	EPA 314.0 MOD.	6B17097	40	ND	0.995	2/17/2006	2/18/2006	
Sample ID: IPB1537-20 (PSZB-56-40 - Soil)				Sampled: 02/15/06				
Reporting Units: ug/kg								
Perchlorate	EPA 314.0 MOD.	6B17097	40	ND	0.998	2/17/2006	2/18/2006	

Del Mar Analytical, Irvine
Sushmitha Reddy For Patty Mata
Project Manager

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Geomatrix-Corona
250 East Rincon Street, Suite 204
Corona, CA 92879
Attention: Rick Rees

Project ID: Aerojet Azusa
007190.004.1.7
Report Number: IPB1537

Sampled: 02/14/06-02/15/06
Received: 02/15/06

METHOD BLANK/QC DATA

INORGANICS

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 6B17097 Extracted: 02/17/06									
Blank Analyzed: 02/17/2006 (6B17097-BLK1)									
Perchlorate	ND	40	ug/kg						
LCS Analyzed: 02/17/2006 (6B17097-BS1)									
Perchlorate	515	40	ug/kg	500		103 85-115			
Matrix Spike Analyzed: 02/17/2006 (6B17097-MS1)									
Perchlorate	541	40	ug/kg	499	ND	108 80-120			
Matrix Spike Dup Analyzed: 02/17/2006 (6B17097-MSD1)									
Perchlorate	531	40	ug/kg	499	ND	106 80-120	2	20	
Batch: 6B17098 Extracted: 02/17/06									
Blank Analyzed: 02/18/2006 (6B17098-BLK1)									
Perchlorate	ND	40	ug/kg						
LCS Analyzed: 02/18/2006 (6B17098-BS1)									
Perchlorate	520	40	ug/kg	500		104 85-115			
Matrix Spike Analyzed: 02/18/2006 (6B17098-MS1)									
Perchlorate	537	40	ug/kg	499	ND	108 80-120			
Matrix Spike Dup Analyzed: 02/18/2006 (6B17098-MSD1)									
Perchlorate	536	40	ug/kg	499	ND	107 80-120	0	20	
Batch: 6B17100 Extracted: 02/17/06									
Blank Analyzed: 02/18/2006 (6B17100-BLK1)									
Perchlorate	ND	40	ug/kg						

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Project ID: Aerojet Azusa
007190.004.1.7
Report Number: IPB1537

Sampled: 02/14/06-02/15/06
Received: 02/15/06

METHOD BLANK/QC DATA

INORGANICS

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 6B17100 Extracted: 02/17/06									
LCS Analyzed: 02/18/2006 (6B17100-BS1)									
Perchlorate	510	40	ug/kg	500		102 85-115			
Matrix Spike Analyzed: 02/18/2006 (6B17100-MS1)									
Perchlorate	566	40	ug/kg	499	9 2	112 80-120			
Matrix Spike Dup Analyzed: 02/18/2006 (6B17100-MSD1)									
Perchlorate	549	40	ug/kg	499	9 2	108 80-120	3	20	

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Sushmitha Reddy For Patty Mata
Project Manager

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Project ID: Aerojet Azusa
007190.004.1.7
Report Number: IPB1537

Sampled: 02/14/06-02/15/06
Received: 02/15/06

DATA QUALIFIERS AND DEFINITIONS

ND Analyte NOT DETECTED at or above the reporting limit or MDL, if MDL is specified.
RPD Relative Percent Difference

Del Mar Analytical, Irvine
Sushmitha Reddy For Patty Mata
Project Manager

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Attention: Rick Rees

Project ID: Aerojet Azusa
007190.004 1.7
Report Number: IPB1537

Sampled: 02/14/06-02/15/06
Received: 02/15/06

Certification Summary

Del Mar Analytical, Irvine

Method	Matrix	Nelac	California
EPA 314.0 MOD.	Soil	N/A	N/A

Nevada and NELAP provide analyte specific accreditations. Analyte specific information for Del Mar Analytical may be obtained by contacting the laboratory or visiting our website at www.testamericainc.com


Del Mar Analytical, Irvine
Sushmitha Reddy For Patty Mata
Project Manager

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IPB1537 <Page 8 of 8>

CHAIN-OF-CUSTODY RECORD

IPB1537 COR 10116

PROJECT NAME: AERJET-AISA PERKINELMER AOC				DATE: 2/15/06		PAGE 1 OF 3						
PROJECT NUMBER: 7190.004 1.7		LABORATORY NAME: DEL MAR		CLIENT INFORMATION: AERJET-AISA		REPORTING REQUIREMENTS						
RESULTS TO: G. RICHARD REES		LABORATORY ADDRESS: 17461 DEERIAN STE 100										
TURNAROUND TIME: STANDARD		IRVINE CA 92614										
SAMPLE SHIPMENT METHOD: CARRIER		LABORATORY CONTACT: PATTI MATA		GEOTRACKER REQUIRED		YES <input type="radio"/> NO <input checked="" type="radio"/>						
		LABORATORY PHONE NUMBER: 949-261-1022		SITE SPECIFIC GLOBAL ID NO								
SAMPLERS (SIGNATURE):			ANALYSES									
DATE	TIME	SAMPLE NUMBER	EPA 314	5 DAY TURNAROUND	CONTAINER TYPE AND SIZE	Soil (S), Water (W), Vapor (V), or Other (O)	Filtered	Preservative Type	Cooled	MS/MSD	No. of Containers	ADDITIONAL COMMENTS
2/14/06	16:31	PS2B-57-15	X		GLASS 402	S			X		1	
2/15/06	7:06	PS2B-57-20	X		" "	S			X		1	
2/15/06	7:44	PS2B-57-25	X		" "	S			X		1	
2/15/06	8:02	PS2B-57-30	X	X	" "	S			X		1	5 DAY TURNAROUND
2/15/06	8:27	PS2B-57-35	X	X	" "	S			X		1	5 DAY TURNAROUND
2/15/06	8:31	PS2B-57-40	X	X	" "	S			X		1	5 DAY TURNAROUND
2/15/06	10:35	PS2B-51A-15	X		" "	S			X		1	
2/15/06	10:40	PS2B-51A-20	X		" "	S			X		1	
2/15/06	10:55	PS2B-51A-25	X		" "	S			X		1	
2/15/06	11:09	PS2B-51A-30	X	X	" "	S			X		1	5 DAY TURNAROUND
2/15/06	11:18	PS2B-51A-35	X	X	" "	S			X		1	5 DAY TURNAROUND
2/15/06	11:21	PS2B-51A-40	X	X	" "	S			X		1	5 DAY TURNAROUND
2/15/06	14:41	PS2B-56-7.5	X		" "	S			X		1	
2/15/06	14:51	PS2B-56-10	X		" "	S			X		1	
2/15/06	14:58	PS2B-56-15	X		" "	S			X		1	ER
RELINQUISHED BY:		DATE	TIME	RECEIVED BY:		DATE	TIME	TOTAL NUMBER OF CONTAINERS		15		
SIGNATURE: <i>Kurt Zefler</i>		2/15/06	16:21	SIGNATURE: <i>Emilio Reyes</i>		2/15/06	16:24	SAMPLING COMMENTS:				
PRINTED NAME: KURT ZEFLER				PRINTED NAME: EMILIO REYES								
COMPANY: GEOMATRIX				COMPANY: DEL MAR								
SIGNATURE: <i>Emilio Reyes</i>		2/15/06	18:15	SIGNATURE: <i>Armando Herron</i>		2/15/06	18:15					
PRINTED NAME: EMILIO REYES				PRINTED NAME: ARMANDO HERRON								
COMPANY: DEL MAR				COMPANY: DEL MAR								
SIGNATURE:				SIGNATURE:								
PRINTED NAME:				PRINTED NAME:								
COMPANY:				COMPANY:								
250 East Rincon Street, Suite 204 Corona, California 92879-1363 Tel 951.273.7400 Fax 951.273.7420								 Geomatrix				

036

COR 10117

Q3

LABORATORY REPORT

Prepared For: Geomatrix-Corona
250 East Rincon Street, Suite 204
Corona, CA 92879
Attention: Rick Rees

Project: Aerojet Azusa
007190.004 1.7

Sampled: 02/16/06
Received: 02/16/06
Issued: 03/04/06 16:29

NELAP #01108CA California ELAP#1197 CSDLAC #10117

The results listed within this Laboratory Report pertain only to the samples tested in the laboratory. The analyses contained in this report were performed in accordance with the applicable certifications as noted. All soil samples are reported on a wet weight basis unless otherwise noted in the report. This Laboratory Report is confidential and is intended for the sole use of Del Mar Analytical and its client. This report shall not be reproduced, except in full, without written permission from Del Mar Analytical. The Chain(s) of Custody, 2 pages, are included and are an integral part of this report. This entire report was reviewed and approved for release.

CASE NARRATIVE

SAMPLE RECEIPT: Samples were received intact, at 4°C, on ice and with chain of custody documentation.

HOLDING TIMES: All samples were analyzed within prescribed holding times and/or in accordance with the Del Mar Analytical Sample Acceptance Policy unless otherwise noted in the report.

PRESERVATION: Samples requiring preservation were verified prior to sample analysis.

QA/QC CRITERIA: All analyses met method criteria, except as noted in the report with data qualifiers.

COMMENTS: Only the normal TAT perchlorate sample results are included in this report. All rush results were sent 2/22/06.

SUBCONTRACTED: No analyses were subcontracted to an outside laboratory.

LABORATORY ID	CLIENT ID	MATRIX
IPB1646-01	PSZB-58-7.5	Soil
IPB1646-02	PSZB-58-10	Soil
IPB1646-03	PSZB-58-15	Soil
IPB1646-04	PSZB-58-20	Soil
IPB1646-05	PSZB-58-25	Soil
IPB1646-09	PSZB-59-7.5	Soil
IPB1646-10	PSZB-59-10	Soil
IPB1646-11	PSZB-59-15	Soil
IPB1646-12	PSZB-59-20	Soil
IPB1646-13	PSZB-59-25	Soil

Reviewed By:



Del Mar Analytical, Irvine
Michele Chamberlin For Patty Mata
Project Manager



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Geomatrix-Corona
 250 East Rincon Street, Suite 204
 Corona, CA 92879
 Attention: Rick Rees

Project ID: Aerojet Azusa
 007190.004.1.7
 Report Number: IPB1646

Sampled: 02/16/06
 Received: 02/16/06

INORGANICS

Analyte	Method	Batch	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IPB1646-01 (PSZB-58-7.5 - Soil)								
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	6B17100	0.040	0.64	0.998	2/17/2006	2/20/2006	
Sample ID: IPB1646-02 (PSZB-58-10 - Soil)								
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	6B17100	0.040	0.15	0.995	2/17/2006	2/20/2006	
Sample ID: IPB1646-03 (PSZB-58-15 - Soil)								
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	6B17100	0.040	ND	0.998	2/17/2006	2/21/2006	
Sample ID: IPB1646-04 (PSZB-58-20 - Soil)								
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	6B17100	0.040	ND	0.998	2/17/2006	2/20/2006	
Sample ID: IPB1646-05 (PSZB-58-25 - Soil)								
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	6B17100	0.040	ND	0.998	2/17/2006	2/21/2006	
Sample ID: IPB1646-09 (PSZB-59-7.5 - Soil)								
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	6B17100	0.040	ND	0.995	2/17/2006	2/20/2006	
Sample ID: IPB1646-10 (PSZB-59-10 - Soil)								
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	6B17100	0.040	ND	0.995	2/17/2006	2/20/2006	
Sample ID: IPB1646-11 (PSZB-59-15 - Soil)								
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	6B17100	0.040	ND	0.995	2/17/2006	2/20/2006	
Sample ID: IPB1646-12 (PSZB-59-20 - Soil)								
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	6B17100	0.040	ND	0.995	2/17/2006	2/20/2006	
Sample ID: IPB1646-13 (PSZB-59-25 - Soil)								
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	6B17100	0.040	ND	0.995	2/17/2006	2/21/2006	

Del Mar Analytical, Irvine
 Michele Chamberlin For Patty Mata
 Project Manager

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Geomatrix-Corona
250 East Rincon Street, Suite 204
Corona, CA 92879
Attention: Rick Rees

Project ID: Aerojet Azusa
007190.004.1.7
Report Number: IPB1646

Sampled: 02/16/06
Received: 02/16/06

METHOD BLANK/QC DATA

INORGANICS

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 6B17100 Extracted: 02/17/06									
Blank Analyzed: 02/18/2006 (6B17100-BLK1)									
Perchlorate	ND	0.040	mg/kg						
LCS Analyzed: 02/18/2006 (6B17100-BS1)									
Perchlorate	0.510	0.040	mg/kg	0.500		102 85-115			
Matrix Spike Analyzed: 02/18/2006 (6B17100-MS1)									
Perchlorate	0.566	0.040	mg/kg	0.499	0.0092	112 80-120			
Matrix Spike Dup Analyzed: 02/18/2006 (6B17100-MSD1)									
Perchlorate	0.549	0.040	mg/kg	0.499	0.0092	108 80-120	3	20	

Del Mar Analytical, Irvine
Michele Chamberlin For Patty Mata
Project Manager

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Geomatrix-Corona
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Corona, CA 92879
Attention: Rick Rees

Project ID: Aerojet Azusa
007190.004.1.7
Report Number: IPB1646

Sampled: 02/16/06
Received: 02/16/06

DATA QUALIFIERS AND DEFINITIONS

ND Analyte NOT DETECTED at or above the reporting limit or MDL, if MDL is specified.
RPD Relative Percent Difference

Del Mar Analytical, Irvine
Michele Chamberlin For Patty Mata
Project Manager

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Project ID: Aerojet Azusa
007190.004.1.7
Report Number: IPB1646

Sampled: 02/16/06
Received: 02/16/06

Certification Summary

Del Mar Analytical, Irvine

Method	Matrix	Nelac	California
EPA 314.0 MOD.	Soil	N/A	N/A

Nevada and NELAP provide analyte specific accreditations. Analyte specific information for Del Mar Analytical may be obtained by contacting the laboratory or visiting our website at www.testamericainc.com

Del Mar Analytical, Irvine
Michele Chamberlin For Patty Mata
Project Manager

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IPB1646 <Page 5 of 5>

CHAIN-OF-CUSTODY RECORD

7001046

COR 10118

PROJECT NAME AEROJET-AISA PERKINELMER AOC		DATE: 2/16/06	PAGE 1 OF 2
PROJECT NUMBER 7190 664 1.7	LABORATORY NAME DEL MAR	CLIENT INFORMATION AEROJET-AISA	
RESULTS TO G RICHARD REES	LABORATORY ADDRESS 17461 DERIAN STE 100	REPORTING REQUIREMENTS	
TURNAROUND TIME STANDARD	IRVINE CA 92614		
SAMPLE SHIPMENT METHOD COURIER	LABORATORY CONTACT PATTE MATA	GEOTRACKER REQUIRED YES <input checked="" type="checkbox"/>	
	LABORATORY PHONE NUMBER 949-261-1022	SITE SPECIFIC GLOBAL ID NO	

SAMPLERS (SIGNATURE):

[Signature]

ANALYSES

DATE	TIME	SAMPLE NUMBER	EPA 314	5 DAY TURNAROUND	CONTAINER TYPE AND SIZE	Soil (S), Water (W), Vapor (V), or Other (O)	Filtered	Preservative Type	Cooled	MS/MSD	No. of Containers	ADDITIONAL COMMENTS
2/16/06	7:36	PS2B-58-7.5	X		GLASS 402	S			X		1	
2/16/06	8:01	PS2B-58-10	X		" "	S			X		1	
2/16/06	8:29	PS2B-58-15	X		" "	S			X		1	
2/16/06	8:40	PS2B-58-20	X		" "	S			X		1	
2/16/06	9:11	PS2B-58-25	X		" "	S			X		1	
2/16/06	9:25	PS2B-58-30	X	X	" "	S			X		1	5 DAY TURNAROUND
2/16/06	9:36	PS2B-58-35	X	X	" "	S			X		1	5 DAY TURNAROUND
2/16/06	9:52	PS2B-58-40	X	X	" "	S			X		1	5 DAY TURNAROUND
2/16/06	11:52	PS2B-59-7.5	X		" "	S			X		1	
2/16/06	11:58	PS2B-59-10	X		" "	S			X		1	
2/16/06	12:05	PS2B-59-15	X		" "	S			X		1	
2/16/06	12:25	PS2B-59-20	X		" "	S			X		1	
2/16/06	12:36	PS2B-59-25	X		" "	S			X		1	
2/16/06	12:28	PS2B-59-30	X	X	" "	S			X		1	5 DAY TURNAROUND
2/16/06	15:23	PS2B-59-35	X	X	" "	S			X		1	5 DAY TURNAROUND

RELINQUISHED BY:	DATE	TIME	RECEIVED BY:	DATE	TIME	TOTAL NUMBER OF CONTAINERS:
SIGNATURE: <i>[Signature]</i>	2/16/06	15:26	SIGNATURE: <i>[Signature]</i>	2/16/06	15:46	SAMPLING COMMENTS: 00
PRINTED NAME: KURT ZEILER			PRINTED NAME: Emilio Paez			
COMPANY: GEOMATRIX			COMPANY: DEL MAR			
SIGNATURE: <i>[Signature]</i>	2/16/06	18:00	SIGNATURE: <i>[Signature]</i>	2/16/06	18:00	@ 4°C
PRINTED NAME: Emilio Paez			PRINTED NAME: Alfonso Herrera			
COMPANY: DEL MAR			COMPANY: Del Mar			
SIGNATURE:			SIGNATURE:			250 East Rincon Street, Suite 204 Corona, California 92879-1363 Tel 951.273.7400 Fax 951.273.7420
PRINTED NAME:			PRINTED NAME:			
COMPANY:			COMPANY:			



Geomatrix

COR 10119

 Geomatrix



Del Mar Analytical

17461 Denan Ave., Suite 100, Irvine, CA 92614 (949) 261-1022 FAX (949) 260-3297
1014 E. Cooley Dr., Suite A, Colton, CA 92324 (909) 370-4667 FAX (909) 370-1046
9830 South 51st St., Suite B-120, Phoenix, AZ 85044 (480) 785-0043 FAX (480) 785-0851
2520 E. Sunset Rd. #3, Las Vegas, NV 89120 (702) 798-3620 FAX (702) 798-3621

LABORATORY REPORT

Prepared For: Geomatrix-Corona
250 East Rincon Street, Suite 204
Corona, CA 92879
Attention: Rick Rees

Project: Aerojet Azusa
007190.004.1.7

Sampled: 02/16/06
Received: 02/16/06
Issued: 02/22/06 12:17

NELAP #01108CA California ELAP#1197 CSDLAC #10117

The results listed within this Laboratory Report pertain only to the samples tested in the laboratory. The analyses contained in this report were performed in accordance with the applicable certifications as noted. All soil samples are reported on a wet weight basis unless otherwise noted in the report. This Laboratory Report is confidential and is intended for the sole use of Del Mar Analytical and its client. This report shall not be reproduced, except in full, without written permission from Del Mar Analytical. The Chain(s) of Custody, 2 pages, are included and are an integral part of this report. This entire report was reviewed and approved for release.

CASE NARRATIVE

SAMPLE RECEIPT: Samples were received intact, at 4°C, on ice and with chain of custody documentation.

HOLDING TIMES: All samples were analyzed within prescribed holding times and/or in accordance with the Del Mar Analytical Sample Acceptance Policy unless otherwise noted in the report.

PRESERVATION: Samples requiring preservation were verified prior to sample analysis.

QA/QC CRITERIA: All analyses met method criteria, except as noted in the report with data qualifiers.

COMMENTS: Only the rush perchlorate sample results are included in this report. All other results will be sent under separate cover when complete.

SUBCONTRACTED: No analyses were subcontracted to an outside laboratory.

LABORATORY ID	CLIENT ID	MATRIX
IPB1646-06	PSZB-58-30	Soil
IPB1646-07	PSZB-58-35	Soil
IPB1646-08	PSZB-58-40	Soil
IPB1646-14	PSZB-59-30	Soil
IPB1646-15	PSZB-59-35	Soil
IPB1646-16	PSZB-59-40	Soil

Reviewed By:

Del Mar Analytical, Irvine
Patty Mata
Project Manager



Del Mar Analytical

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2520 E Sunset Rd. #3, Las Vegas, NV 89120 (702) 798-3620 FAX (702) 798-3621

Geomatrix-Corona
250 East Rincon Street, Suite 204
Corona, CA 92879
Attention: Rick Rees

Project ID: Aerojet Azusa
007190.004.1.7
Report Number: IPB1646

Sampled: 02/16/06
Received: 02/16/06

INORGANICS

Analyte	Method	Batch	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IPB1646-06 (PSZB-58-30 - Soil)								
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	6B17097	0.040	ND	1	2/17/2006	2/18/2006	
Sample ID: IPB1646-07 (PSZB-58-35 - Soil)								
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	6B17097	0.040	ND	0.998	2/17/2006	2/18/2006	
Sample ID: IPB1646-08 (PSZB-58-40 - Soil)								
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	6B17097	0.040	ND	0.998	2/17/2006	2/18/2006	
Sample ID: IPB1646-14 (PSZB-59-30 - Soil)								
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	6B17097	0.040	ND	0.998	2/17/2006	2/18/2006	
Sample ID: IPB1646-15 (PSZB-59-35 - Soil)								
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	6B17097	0.040	ND	0.998	2/17/2006	2/18/2006	
Sample ID: IPB1646-16 (PSZB-59-40 - Soil)								
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	6B17097	0.040	ND	0.998	2/17/2006	2/18/2006	

Del Mar Analytical, Irvine
Patty Mata
Project Manager

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IPB1646 <Page 2 of 5>



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Geomatrix-Corona
250 East Rincon Street, Suite 204
Corona, CA 92879
Attention: Rick Rees

Project ID: Aerojet Azusa
007190.004.1.7
Report Number: IPB1646

Sampled: 02/16/06
Received: 02/16/06

METHOD BLANK/QC DATA

INORGANICS

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 6B17097 Extracted: 02/17/06									
Blank Analyzed: 02/17/2006 (6B17097-BLK1)									
Perchlorate	ND	0.040	mg/kg						
LCS Analyzed: 02/17/2006 (6B17097-BS1)									
Perchlorate	0.515	0.040	mg/kg	0.500		103 85-115			
Matrix Spike Analyzed: 02/17/2006 (6B17097-MS1)									
Perchlorate	0.541	0.040	mg/kg	0.499	ND	108 80-120			
Matrix Spike Dup Analyzed: 02/17/2006 (6B17097-MSD1)									
Perchlorate	0.531	0.040	mg/kg	0.499	ND	106 80-120	2	20	

Del Mar Analytical, Irvine
Patty Mata
Project Manager

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IPB1646 <Page 3 of 5>



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Geomatrix-Corona
250 East Rincon Street, Suite 204
Corona, CA 92879
Attention: Rick Rees

Project ID: Aerojet Azusa
007190.004.1.7
Report Number: IPB1646

Sampled: 02/16/06
Received: 02/16/06

DATA QUALIFIERS AND DEFINITIONS

ND Analyte NOT DETECTED at or above the reporting limit or MDL, if MDL is specified.
RPD Relative Percent Difference

Del Mar Analytical, Irvine
Patty Mata
Project Manager

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IPB1646 <Page 4 of 5>



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2520 E. Sunset Rd. #3, Las Vegas, NV 89120 (702) 798-3620 FAX (702) 798-3621

Geomatrix-Corona
250 East Rincon Street, Suite 204
Corona, CA 92879
Attention: Rick Rees

Project ID: Aerojet Azusa
007190.004.1.7
Report Number: IPB1646

Sampled: 02/16/06
Received: 02/16/06

Certification Summary

Del Mar Analytical, Irvine

Method	Matrix	Nelac	California
EPA 314.0 MOD.	Soil	N/A	N/A

Nevada and NELAP provide analyte specific accreditations. Analyte specific information for Del Mar Analytical may be obtained by contacting the laboratory or visiting our website at www.dmalabs.com.

Del Mar Analytical, Irvine
Patty Mata
Project Manager


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IPB1646 <Page 5 of 5>

CHAIN-OF-CUSTODY RECORD

702B1646


COR 10118

PROJECT NAME: AEROJET-AISA PERKINELMER ACC			DATE: 2/16/06			PAGE 1 OF 2								
PROJECT NUMBER 7190.664 1.7			LABORATORY NAME DEL MAR			CLIENT INFORMATION AEROJET-AISA								
RESULTS TO G RICHARD KEEVES			LABORATORY ADDRESS 17461 DERIAN STE 10			REPORTING REQUIREMENTS								
TURNAROUND TIME STANDARD			IRVINE CA 92614											
SAMPLE SHIPMENT METHOD COURIER			LABORATORY CONTACT PATIE MATA			GEOTRACKER REQUIRED YES <input checked="" type="checkbox"/>								
			LABORATORY PHONE NUMBER 949-261-1022			SITE SPECIFIC GLOBAL ID NO								
SAMPLERS (SIGNATURE):			ANALYSES											
DATE	TIME	SAMPLE NUMBER	EPA 314	5 DAY TURNAROUND			CONTAINER TYPE AND SIZE	Soil (S), Water (W), Vapor (V), or Other (O)	Filtered	Preservative Type	Cooled	MS/MSD	No. of Containers	ADDITIONAL COMMENTS
2/16/06	7:36	PS2B-58-7.5	X				GLASS 402	S			X		1	
2/16/06	8:01	PS2B-58-10	X				" "	S			X		1	
2/16/06	8:29	PS2B-58-15	X				" "	S			X		1	
2/16/06	8:40	PS2B-58-20	X				" "	S			X		1	
2/16/06	9:11	PS2B-58-25	X				" "	S			X		1	
2/16/06	9:25	PS2B-58-30	X	X			" "	S			X		1	5 DAY TURNAROUND
2/16/06	9:36	PS2B-58-35	X	X			" "	S			X		1	5 DAY TURNAROUND
2/16/06	9:52	PS2B-58-40	X	X			" "	S			X		1	5 DAY TURNAROUND
2/16/06	11:52	PS2B-59-7.5	X				" "	S			X		1	
2/16/06	11:58	PS2B-59-10	X				" "	S			X		1	
2/16/06	12:05	PS2B-59-15	X				" "	S			X		1	
2/16/06	12:25	PS2B-59-20	X				" "	S			X		1	
2/16/06	12:36	PS2B-59-25	X				" "	S			X		1	
2/16/06	12:28	PS2B-59-30	X	X			" "	S			X		1	5 DAY TURNAROUND
2/16/06	15:23	PS2B-59-35	X	X			" "	S			X		1	5 DAY TURNAROUND
RELINQUISHED BY:		DATE	TIME	RECEIVED BY:		DATE	TIME	TOTAL NUMBER OF CONTAINERS:						
SIGNATURE: Kuri Zeiler		2/16/06	15:46	SIGNATURE: Emilio Perez		2/16/06	15:46	SAMPLING COMMENTS						
PRINTED NAME: KURI ZEILER				PRINTED NAME: Emilio Perez										
COMPANY: GEOMATRIX				COMPANY: DEL MAR AV.										
SIGNATURE: Emilio Perez		2/16/06	18:23	SIGNATURE: Francisco Herrera		2/16/06	18:00							
PRINTED NAME: Emilio Perez				PRINTED NAME: Francisco Herrera										
COMPANY: DEL MAR AV.				COMPANY: Del Mar										
SIGNATURE:				SIGNATURE:										
PRINTED NAME:				PRINTED NAME:										
COMPANY:				COMPANY:										
250 East Rincon Street, Suite 204 Corona, California 92879-1363 Tel 951.273.7400 Fax 951.273.7420								 Geomatrix						

CHAIN-OF-CUSTODY RECORD

1/13/1644

COR 10119

PROJECT NAME: AERJET-AISA PERKINELMER AGC				DATE: 2/16/06		PAGE 2 OF 2																																																																																																														
PROJECT NUMBER 7190.004 1.7		LABORATORY NAME DELMAR		CLIENT INFORMATION AERJET-AISA		REPORTING REQUIREMENTS																																																																																																														
RESULTS TO G. RICHARD REES		LABORATORY ADDRESS 1746 OCEAN STE 10																																																																																																																		
TURNAROUND TIME 5 DAY TURNAROUND		IRVINE CA 92614																																																																																																																		
SAMPLE SHIPMENT METHOD COOLER		LABORATORY CONTACT PATTE MATA		GEOTRACKER REQUIRED YES		(NO)																																																																																																														
		LABORATORY PHONE NUMBER 949-261-1622		SITE SPECIFIC GLOBAL ID NO																																																																																																																
SAMPLERS (SIGNATURE): <i>[Signature]</i>			ANALYSES																																																																																																																	
DATE	TIME	SAMPLE NUMBER	EPA 314	5 DAY TURNAROUND	CONTAINER TYPE AND SIZE	Soil (S), Water (W), Vapor (V), or Other (O)	Filtered	Preservative Type	Cooled	MS/MSD	No. of Containers	ADDITIONAL COMMENTS																																																																																																								
2/16/06	15:27	PS2B-59-40	X	X	GLASS 40Z	S			X		1	5 DAY TURNAROUND																																																																																																								
RELINQUISHED BY:		DATE	TIME	RECEIVED BY:		DATE	TIME	TOTAL NUMBER OF CONTAINERS		SAMPLING COMMENTS:																																																																																																										
SIGNATURE <i>[Signature]</i>		2/16/06	15:48	SIGNATURE <i>[Signature]</i>		2/16/06	15:46	4																																																																																																												
PRINTED NAME: KURT ZEILER				PRINTED NAME: Emilio Reyes																																																																																																																
COMPANY: GEOMATRIX				COMPANY: DELMAR																																																																																																																
SIGNATURE <i>[Signature]</i>		2/16/06	18:00	SIGNATURE <i>[Signature]</i>		2/16/06	18:00																																																																																																													
PRINTED NAME: Emilio Reyes				PRINTED NAME: HIRSHAW																																																																																																																
COMPANY: DELMAR				COMPANY: DELMAR																																																																																																																
SIGNATURE				SIGNATURE																																																																																																																
PRINTED NAME				PRINTED NAME																																																																																																																
COMPANY				COMPANY																																																																																																																
250 East Rincon Street, Suite 204 Corona, California 92879-1363 Tel 951.273.7400 Fax 951.273.7420						 Geomatrix																																																																																																														



LABORATORY REPORT

Prepared For: Geomatrix-Corona
250 East Rincon Street, Suite 204
Corona, CA 92879
Attention: Rick Rees

Project: Aerojet Azusa
007190.004.1.7

Sampled: 02/17/06
Received: 02/17/06
Issued: 02/24/06 16:39

NELAP #01108CA California ELAP#1197 CSDLAC #10117

The results listed within this Laboratory Report pertain only to the samples tested in the laboratory. The analyses contained in this report were performed in accordance with the applicable certifications as noted. All soil samples are reported on a wet weight basis unless otherwise noted in the report. This Laboratory Report is confidential and is intended for the sole use of Del Mar Analytical and its client. This report shall not be reproduced, except in full, without written permission from Del Mar Analytical. The Chain(s) of Custody, 2 pages, are included and are an integral part of this report. This entire report was reviewed and approved for release.

CASE NARRATIVE

SAMPLE RECEIPT: Samples were received intact, at 3°C, on ice and with chain of custody documentation.

HOLDING TIMES: All samples were analyzed within prescribed holding times and/or in accordance with the Del Mar Analytical Sample Acceptance Policy unless otherwise noted in the report.

PRESERVATION: Samples requiring preservation were verified prior to sample analysis.

QA/QC CRITERIA: All analyses met method criteria, except as noted in the report with data qualifiers.

COMMENTS: No significant observations were made.

SUBCONTRACTED: No analyses were subcontracted to an outside laboratory.

LABORATORY ID	CLIENT ID	MATRIX
IPB1767-01	PSZB-55-7.5	Soil
IPB1767-02	PSZB-55-10	Soil
IPB1767-03	PSZB-55-15	Soil
IPB1767-04	PSZB-55-20	Soil
IPB1767-05	PSZB-55-25	Soil
IPB1767-06	PSZB-55-30	Soil
IPB1767-07	PSZB-55-35	Soil
IPB1767-08	PSZB-55-40	Soil
IPB1767-09	PSZB-65-7.5	Soil
IPB1767-10	PSZB-65-10	Soil
IPB1767-11	PSZB-65-15	Soil

Del Mar Analytical, Irvine
Patty Mata
Project Manager



Del Mar Analytical

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Geomatrix-Corona
250 East Rincon Street, Suite 204
Corona, CA 92879
Attention: Rick Rees

Project ID: Aerojet Azusa
007190.004.1.7
Report Number: IPB1767

Sampled: 02/17/06
Received: 02/17/06

LABORATORY ID

IPB1767-12
IPB1767-13
IPB1767-14
IPB1767-15
IPB1767-16

CLIENT ID

PSZB-65-20
PSZB-65-25
PSZB-65-30
PSZB-65-35
PSZB-65-40

MATRIX

Soil
Soil
Soil
Soil
Soil

Reviewed By:

Del Mar Analytical, Irvine
Patty Mata
Project Manager

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IPB1767 <Page 2 of 7>



Del Mar Analytical

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Geomatrix-Corona
250 East Rincon Street, Suite 204
Corona, CA 92879
Attention: Rick Rees

Project ID: Aerojet Azusa
007190.004.1.7
Report Number: IPB1767

Sampled: 02/17/06
Received: 02/17/06

INORGANICS

Analyte	Method	Batch	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IPB1767-01 (PSZB-55-7.5 - Soil)								
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	6B20098	0.040	ND	0.998	2/20/2006	2/21/2006	
Sample ID: IPB1767-02 (PSZB-55-10 - Soil)								
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	6B20098	0.040	ND	0.998	2/20/2006	2/21/2006	
Sample ID: IPB1767-03 (PSZB-55-15 - Soil)								
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	6B20098	0.040	ND	1	2/20/2006	2/21/2006	
Sample ID: IPB1767-04 (PSZB-55-20 - Soil)								
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	6B20098	0.040	ND	0.998	2/20/2006	2/22/2006	
Sample ID: IPB1767-05 (PSZB-55-25 - Soil)								
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	6B20098	0.040	ND	0.995	2/20/2006	2/21/2006	
Sample ID: IPB1767-06 (PSZB-55-30 - Soil)								
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	6B20098	0.040	ND	1	2/20/2006	2/21/2006	
Sample ID: IPB1767-07 (PSZB-55-35 - Soil)								
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	6B20098	0.040	ND	0.998	2/20/2006	2/21/2006	
Sample ID: IPB1767-08 (PSZB-55-40 - Soil)								
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	6B20098	0.040	ND	0.998	2/20/2006	2/21/2006	
Sample ID: IPB1767-09 (PSZB-65-7.5 - Soil)								
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	6B20098	0.040	ND	0.995	2/20/2006	2/21/2006	
Sample ID: IPB1767-10 (PSZB-65-10 - Soil)								
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	6B20098	0.040	ND	0.998	2/20/2006	2/21/2006	

Del Mar Analytical, Irvine
Patty Mata
Project Manager

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IPB1767 <Page 3 of 7>



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Geomatrix-Corona
250 East Rincon Street, Suite 204
Corona, CA 92879
Attention: Rick Rees

Project ID: Aerojet Azusa
007190.004.1.7
Report Number: IPB1767

Sampled: 02/17/06
Received: 02/17/06

INORGANICS

Analyte	Method	Batch	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IPB1767-11 (PSZB-65-15 - Soil)								
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	6B20098	0.040	ND	0.995	2/20/2006	2/21/2006	
Sample ID: IPB1767-12 (PSZB-65-20 - Soil)								
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	6B20098	0.040	ND	0.998	2/20/2006	2/21/2006	
Sample ID: IPB1767-13 (PSZB-65-25 - Soil)								
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	6B20098	0.040	ND	0.998	2/20/2006	2/21/2006	
Sample ID: IPB1767-14 (PSZB-65-30 - Soil)								
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	6B20098	0.040	ND	0.993	2/20/2006	2/21/2006	
Sample ID: IPB1767-15 (PSZB-65-35 - Soil)								
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	6B20098	0.040	ND	0.995	2/20/2006	2/21/2006	
Sample ID: IPB1767-16 (PSZB-65-40 - Soil)								
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	6B20098	0.040	ND	0.995	2/20/2006	2/21/2006	

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Geomatrix-Corona
250 East Rincon Street, Suite 204
Corona, CA 92879
Attention: Rick Rees

Project ID: Aerojet Azusa
007190 004.1.7
Report Number: IPB1767

Sampled: 02/17/06
Received: 02/17/06

METHOD BLANK/QC DATA

INORGANICS

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC %REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 6B20098 Extracted: 02/20/06									
Blank Analyzed: 02/21/2006 (6B20098-BLK1)									
Perchlorate	ND	0.040	mg/kg						
LCS Analyzed: 02/21/2006 (6B20098-BS1)									
Perchlorate	0.564	0.040	mg/kg	0.500		113 85-115			
Matrix Spike Analyzed: 02/21/2006 (6B20098-MS1)									
Perchlorate	0.544	0.040	mg/kg	0.499	ND	109 80-120			
Matrix Spike Dup Analyzed: 02/21/2006 (6B20098-MSD1)									
Perchlorate	0.567	0.040	mg/kg	0.499	ND	114 80-120	4	20	

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Geomatrix-Corona
250 East Rincon Street, Suite 204
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Attention: Rick Rees

Project ID: Aerojet Azusa
007190.004.1.7
Report Number: IPB1767

Sampled: 02/17/06
Received: 02/17/06

DATA QUALIFIERS AND DEFINITIONS

ND Analyte NOT DETECTED at or above the reporting limit or MDL, if MDL is specified.
RPD Relative Percent Difference

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Patty Mata
Project Manager

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Geomatrix-Corona
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Corona, CA 92879
Attention: Rick Rees

Project ID: Aerojet Azusa
007190.004.1.7
Report Number: IPB1767

Sampled: 02/17/06
Received: 02/17/06

Certification Summary

Del Mar Analytical, Irvine

Method	Matrix	Nelac	California
EPA 314.0 MOD.	Soil	N/A	N/A

Nevada and NELAP provide analyte specific accreditations. Analyte specific information for Del Mar Analytical may be obtained by contacting the laboratory or visiting our website at www.testamericainc.com

Del Mar Analytical, Irvine
Patty Mata
Project Manager


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IPB1767 <Page 7 of 7>

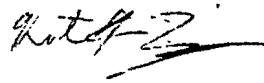
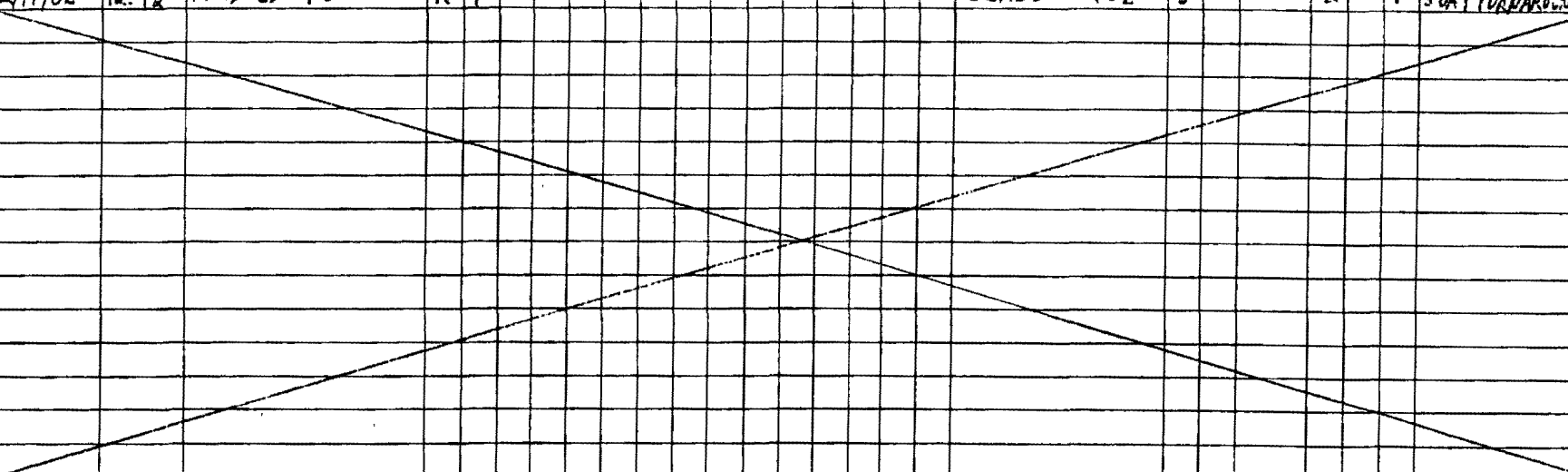

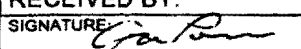

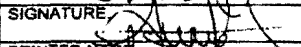
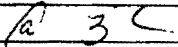

CHAIN-OF-CUSTODY RECORD

IPB17657

COR 10120

PROJECT NAME: AEROJET-AISA PERKIN ELMER AUC						DATE: 2/17/06		PAGE 1 OF 2								
PROJECT NUMBER: 7190 CC 1.7			LABORATORY NAME: DEL MAR		CLIENT INFORMATION: AEROJET-AISA		REPORTING REQUIREMENTS									
RESULTS TO: G. ALCHARD REFS			LABORATORY ADDRESS: 17861 DEPIAN STE 101													
TURNAROUND TIME: STANDARD			IRVINE CA 92614													
SAMPLE SHIPMENT METHOD: COOLIER			LABORATORY CONTACT: PATE MATA				GEOTRACKER REQUIRED: YES (NO)									
			LABORATORY PHONE NUMBER: 949-261-1022				SITE SPECIFIC GLOBAL ID NO									
SAMPLERS (SIGNATURE): <i>Kurt Zettler</i>			ANALYSES													
DATE	TIME	SAMPLE NUMBER	EPA 314	5 DAY TURNAROUND					CONTAINER TYPE AND SIZE	Soil (S), Water (W), Vapor (V), or Other (O)	Filtered	Preservative Type	Cooled	MS/MSD	No. of Containers	ADDITIONAL COMMENTS
2/17/06	7:13	PS2B-55-7.5	X						GLASS 40Z	S			X		1	
2/17/06	7:30	PS2B-55-10	X						" "	S			X		1	
2/17/06	7:43	PS2B-55-15	X						" "	S			X		1	
2/17/06	8:18	PS2B-55-20	X						" "	S			X		1	
2/17/06	8:31	PS2B-55-25	X						" "	S			X		1	
2/17/06	8:42	PS2B-55-30	X	X					" "	S			X		1	5 DAY TURNAROUND
2/17/06	9:02	PS2B-55-35	X	X					" "	S			X		1	5 DAY TURNAROUND
2/17/06	9:06	PS2B-55-40	X	X					" "	S			X		1	5 DAY TURNAROUND
2/17/06	10:59	PS2B-65-7.5	X						" "	S			X		1	
2/17/06	11:07	PS2B-65-10	X						" "	S			X		1	
2/17/06	11:13	PS2B-65-15	X						" "	S			X		1	
2/17/06	11:19	PS2B-65-20	X						" "	S			X		1	
2/17/06	11:27	PS2B-65-25	X						" "	S			X		1	
2/17/06	11:36	PS2B-65-30	X	X					" "	S			X		1	5 DAY TURNAROUND
2/17/06	12:40	PS2B-65-35	X	X					" "	S			X		1	5 DAY TURNAROUND
RELINQUISHED BY:		DATE	TIME	RECEIVED BY:		DATE	TIME	TOTAL NUMBER OF CONTAINERS: 15								
SIGNATURE: <i>Kurt Zettler</i>		2/17/06	16:38	SIGNATURE: <i>Don Power</i>		2/17/06	16:38	SAMPLING COMMENTS:								
PRINTED NAME: KURT ZETTLER				PRINTED NAME: Don Power												
COMPANY: GEOMATRIX				COMPANY: DMAI												
SIGNATURE: <i>Don Power</i>		2/17/06	17:45	SIGNATURE: <i>Antonio Herrera</i>		2/17/06	17:45	② 3 C								
PRINTED NAME: Don Power				PRINTED NAME: Antonio Herrera												
COMPANY: DMAI				COMPANY: Del Mar												
SIGNATURE:				SIGNATURE:												
PRINTED NAME:				PRINTED NAME:												
COMPANY:				COMPANY:												
250 East Rincon Street, Suite 204 Corona, California 92879-1363 Tel 951.273.7400 Fax 951.273.7420										 Geomatrix						

COR 10121

PROJECT NAME: AERJET-ALSA PERKINELMER ACC			DATE: 2/17/06			PAGE 2 OF 2						
PROJECT NUMBER 719C CC4 1.7			LABORATORY NAME DEL MAR			CLIENT INFORMATION AERJET-ALSA						
RESULTS TO G. RICHARD REES			LABORATORY ADDRESS 17461 DENISE AVE 100			REPORTING REQUIREMENTS						
TURNAROUND TIME 5 DAY TURNAROUND			DRIVE CA 92614									
SAMPLE SHIPMENT METHOD COURIER			LABORATORY CONTACT PATIE MATA			GEOTRACKER REQUIRED YES <input checked="" type="checkbox"/>						
			LABORATORY PHONE NUMBER 949-361-1023			SITE SPECIFIC GLOBAL ID NO						
SAMPLERS (SIGNATURE): 			ANALYSES									
DATE	TIME	SAMPLE NUMBER	EPA 314	5 DAY TURNAROUND	CONTAINER TYPE AND SIZE	Soil (S), Water (W), Vapor (V), or Other (O)	Filtered	Preservative Type	Cooled	MS/MSD	No. of Containers	ADDITIONAL COMMENTS
2/17/06	12:42	P522-LS-40	X	X	GLASS 402	7			X		1	5 DAY TURNAROUND
												
RELINQUISHED BY:		DATE	TIME	RECEIVED BY:		DATE	TIME	TOTAL NUMBER OF CONTAINERS: 1				
SIGNATURE: 		2/17/06	6:38	SIGNATURE: 		2/17/06	16:36	SAMPLING COMMENTS				
PRINTED NAME: KURT ZOLLER				PRINTED NAME: JON POWER								
COMPANY: GEOMATRIX				COMPANY: DMAT								
SIGNATURE: 		2/17/06	17:45	SIGNATURE: 		2/17/06	17:45					
PRINTED NAME: Jon Power				PRINTED NAME: Armando Herrera								
COMPANY: DMAT				COMPANY: Del Mar								
SIGNATURE:				SIGNATURE:								
PRINTED NAME:				PRINTED NAME:								
COMPANY:				COMPANY:								
250 East Rincon Street, Suite 204 Corona, California 92879-1363 Tel 951.273.7400 Fax 951.273.7420												
 Geomatrix												



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LABORATORY REPORT

Prepared For: Geomatrix-Corona
250 East Rincon Street, Suite 204
Corona, CA 92879
Attention: Rick Rees

Project: Aerojet Azusa
007190.004.1.7

Sampled: 02/21/06
Received: 02/21/06
Issued: 02/28/06 13:26

NELAP #01108CA California ELAP#1197 CSDLAC #10117

The results listed within this Laboratory Report pertain only to the samples tested in the laboratory. The analyses contained in this report were performed in accordance with the applicable certifications as noted. All soil samples are reported on a wet weight basis unless otherwise noted in the report. This Laboratory Report is confidential and is intended for the sole use of Del Mar Analytical and its client. This report shall not be reproduced, except in full, without written permission from Del Mar Analytical. The Chain(s) of Custody, 2 pages, are included and are an integral part of this report.

This entire report was reviewed and approved for release

SAMPLE CROSS REFERENCE

LABORATORY ID	CLIENT ID	MATRIX
IPB1953-01	PSZB-53-1	Soil
IPB1953-02	PSZB-53-2	Soil
IPB1953-03	PSZB-53-5	Soil
IPB1953-04	PSZB-53-7.5	Soil
IPB1953-05	PSZB-53-10	Soil
IPB1953-06	PSZB-54-1	Soil
IPB1953-07	PSZB-54-2	Soil
IPB1953-08	PSZB-54-5	Soil
IPB1953-09	PSZB-54-7.5	Soil
IPB1953-10	PSZB-54-10	Soil
IPB1953-11	PSZB-54-15	Soil
IPB1953-12	PSZB-54-20	Soil
IPB1953-13	PSZB-54-25	Soil
IPB1953-14	PSZB-54-30	Soil
IPB1953-15	PSZB-54-35	Soil
IPB1953-16	PSZB-54-40	Soil

Reviewed By:

Michele Chamberlin

Del Mar Analytical, Irvine
Michele Chamberlin For Patty Mata
Project Manager

Geomatrix-Corona
250 East Rincon Street, Suite 204
Corona, CA 92879
Attention: Rick Rees

Project ID: Aerojet Azusa
007190.004.1.7
Report Number: IPB1953

Sampled: 02/21/06
Received: 02/21/06

INORGANICS

Analyte	Method	Batch	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IPB1953-01 (PSZB-53-1 - Soil)								
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	6B23090	0.040	ND	0.998	2/23/2006	2/24/2006	
Sample ID: IPB1953-02 (PSZB-53-2 - Soil)								
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	6B23090	0.040	ND	0.995	2/23/2006	2/24/2006	
Sample ID: IPB1953-03 (PSZB-53-5 - Soil)								
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	6B23090	0.040	ND	1	2/23/2006	2/24/2006	
Sample ID: IPB1953-04 (PSZB-53-7.5 - Soil)								
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	6B23090	0.040	ND	0.998	2/23/2006	2/24/2006	
Sample ID: IPB1953-05 (PSZB-53-10 - Soil)								
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	6B23090	0.040	ND	1	2/23/2006	2/24/2006	
Sample ID: IPB1953-06 (PSZB-54-1 - Soil)								
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	6B23090	0.040	ND	0.998	2/23/2006	2/24/2006	
Sample ID: IPB1953-07 (PSZB-54-2 - Soil)								
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	6B23090	0.040	ND	0.998	2/23/2006	2/24/2006	
Sample ID: IPB1953-08 (PSZB-54-5 - Soil)								
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	6B23090	0.040	ND	0.998	2/23/2006	2/24/2006	
Sample ID: IPB1953-09 (PSZB-54-7.5 - Soil)								
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	6B23090	0.040	ND	0.998	2/23/2006	2/24/2006	
Sample ID: IPB1953-10 (PSZB-54-10 - Soil)								
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	6B23090	0.040	ND	0.998	2/23/2006	2/24/2006	

Del Mar Analytical, Irvine
Michele Chamberlin For Patty Mata
Project Manager

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Geomatrix-Corona
250 East Rincon Street, Suite 204
Corona, CA 92879
Attention: Rick Rees

Project ID: Aerojet Azusa
007190.004.1.7
Report Number: IPB1953

Sampled: 02/21/06
Received: 02/21/06

INORGANICS

Analyte	Method	Batch	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IPB1953-11 (PSZB-54-15 - Soil)								
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	6B23090	0.040	ND	0.998	2/23/2006	2/24/2006	
Sample ID: IPB1953-12 (PSZB-54-20 - Soil)								
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	6B23090	0.040	ND	0.998	2/23/2006	2/24/2006	
Sample ID: IPB1953-13 (PSZB-54-25 - Soil)								
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	6B23090	0.040	ND	0.995	2/23/2006	2/24/2006	
Sample ID: IPB1953-14 (PSZB-54-30 - Soil)								
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	6B23090	0.040	ND	0.998	2/23/2006	2/24/2006	
Sample ID: IPB1953-15 (PSZB-54-35 - Soil)								
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	6B23090	0.040	ND	0.998	2/23/2006	2/24/2006	
Sample ID: IPB1953-16 (PSZB-54-40 - Soil)								
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	6B23090	0.040	ND	0.998	2/23/2006	2/24/2006	

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Geomatrix-Corona
250 East Rincon Street, Suite 204
Corona, CA 92879
Attention: Rick Rees

Project ID: Aerojet Azusa
007190.004.1.7
Report Number: IPB1953

Sampled: 02/21/06
Received: 02/21/06

METHOD BLANK/QC DATA

INORGANICS

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 6B23090 Extracted: 02/23/06									
Blank Analyzed: 02/24/2006 (6B23090-BLK1)									
Perchlorate	ND	0.040	mg/kg						
LCS Analyzed: 02/24/2006 (6B23090-BS1)									
Perchlorate	0.517	0.040	mg/kg	0.500		103 85-115			
Matrix Spike Analyzed: 02/24/2006 (6B23090-MS1)									
Perchlorate	0.546	0.040	mg/kg	0.498	0.016	106 80-120			
Matrix Spike Dup Analyzed: 02/24/2006 (6B23090-MSD1)									
Perchlorate	0.545	0.040	mg/kg	0.499	0.016	106 80-120	0	20	

Del Mar Analytical, Irvine
Michele Chamberlin For Patty Mata
Project Manager

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Corona, CA 92879
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Project ID: Aerojet Azusa
007190.004.1.7
Report Number: IPB1953

Sampled: 02/21/06
Received: 02/21/06

DATA QUALIFIERS AND DEFINITIONS

ND Analyte NOT DETECTED at or above the reporting limit or MDL, if MDL is specified.
RPD Relative Percent Difference

Del Mar Analytical, Irvine
Michele Chamberlin For Patty Mata
Project Manager

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Project ID: Aerojet Azusa
007190.004.1.7
Report Number: IPB1953

Sampled: 02/21/06
Received: 02/21/06

Certification Summary

Del Mar Analytical, Irvine

Method	Matrix	Nelap	California
EPA 314.0 MOD.	Soil	N/A	N/A

Nevada and NELAP provide analyte specific accreditations. Analyte specific information for Del Mar Analytical may be obtained by contacting the laboratory or visiting our website at www.testamericainc.com

Del Mar Analytical, Irvine
Michele Chamberlin For Patty Mata
Project Manager

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IPB1953 <Page 6 of 6>

CHAIN-OF-CUSTODY RECORD

IPB1953 COR 10122

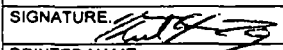

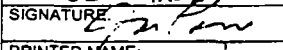

PROJECT NAME: AERJET-AISA PERKINELMER AOC		DATE: 2/21/06	PAGE 1 OF 2
PROJECT NUMBER: 7146 COT 1.7	LABORATORY NAME: DEL MAR	CLIENT INFORMATION: AERJET-AISA	
RESULTS TO: G. RICHARD REES	LABORATORY ADDRESS: 17461 DERIAN STE 100	REPORTING REQUIREMENTS	
TURNAROUND TIME: STANDARD	IRVINE CA 92614		
SAMPLE SHIPMENT METHOD: CARRIER	LABORATORY CONTACT: PATTE MATA	GEOTRACKER REQUIRED: YES (NO)	
	LABORATORY PHONE NUMBER: 714-261-1822	SITE SPECIFIC GLOBAL ID NO	

SAMPLERS (SIGNATURE):



ANALYSES

DATE	TIME	SAMPLE NUMBER	EPA 314	5 DAY TURNAROUND	CONTAINER TYPE AND SIZE	Soil (S), Water (W), Vapor (V), or Other (O)	Filtered	Preservative Type	Cooled	MS/MSD	No. of Containers	ADDITIONAL COMMENTS
2/21/06	9:38	PS2B-53-1	X		GLASS 40Z	S			X		1	
2/21/06	10:05	PS2B-53-2	X		" "	S			X		1	
2/21/06	10:52	PS2B-53-5	X		" "	S			X		1	
2/21/06	10:56	PS2B-53-7.5	X		" "	S			X		1	
2/21/06	10:08	PS2B-53-10	X		" "	S			X		1	
2/21/06	14:22	PS2B-54-1	X		" "	S			X		1	
2/21/06	15:01	PS2B-54-2	X		" "	S			X		1	
2/21/06	15:12	PS2B-54-5	X		" "	S			X		1	
2/21/06	15:15	PS2B-54-7.5	X		" "	S			X		1	
2/21/06	15:29	PS2B-54-10	X		" "	S			X		1	
2/21/06	15:47	PS2B-54-15	X		" "	S			X		1	
2/21/06	15:56	PS2B-54-20	X		" "	S			X		1	
2/21/06	16:03	PS2B-54-25	X		" "	S			X		1	
2/21/06	16:11	PS2B-54-30	X	X	" "	S			X		1	5 DAY TURNAROUND
2/21/06	16:17	PS2B-54-35	X	X	" "	S			X		1	5 DAY TURNAROUND

RELINQUISHED BY:	DATE	TIME	RECEIVED BY:	DATE	TIME	TOTAL NUMBER OF CONTAINERS	15
SIGNATURE: 	2/21/06	17:13	SIGNATURE: 	2/21/06	17:13	SAMPLING COMMENTS:	
PRINTED NAME: KURT ZEILER			PRINTED NAME: Jon Power				
COMPANY: GEOMATRIX			COMPANY: Del Mar				
SIGNATURE: 	2/21/06	17:13	SIGNATURE: 	2/21/06	17:13		
PRINTED NAME: Jon Power			PRINTED NAME: Del Mar				
COMPANY: Del Mar			COMPANY: Del Mar				
SIGNATURE:			SIGNATURE:				
PRINTED NAME:			PRINTED NAME:				
COMPANY:			COMPANY:				

250 East Rincon Street, Suite 204
Corona, California 92879-1363
Tel 951.273.7400 Fax 951.273.7420



Geomatrix

C61

COR 10123


Geomatrix



LABORATORY REPORT

Prepared For: Geomatrix-Corona
250 East Rincon Street, Suite 204
Corona, CA 92879
Attention: Rick Rees

Project: Aerojet Azusa
007190.004.1.7

Sampled: 02/22/06
Received: 02/22/06
Issued: 03/08/06 17:12

NELAP #01108CA California ELAP#1197 CSDLAC #10117

The results listed within this Laboratory Report pertain only to the samples tested in the laboratory. The analyses contained in this report were performed in accordance with the applicable certifications as noted. All soil samples are reported on a wet weight basis unless otherwise noted in the report. This Laboratory Report is confidential and is intended for the sole use of Del Mar Analytical and its client. This report shall not be reproduced, except in full, without written permission from Del Mar Analytical. The Chain(s) of Custody, 2 pages, are included and are an integral part of this report. This entire report was reviewed and approved for release.

CASE NARRATIVE

SAMPLE RECEIPT: Samples were received intact, at 3°C, on ice and with chain of custody documentation.

HOLDING TIMES: All samples were analyzed within prescribed holding times and/or in accordance with the Del Mar Analytical Sample Acceptance Policy unless otherwise noted in the report.

PRESERVATION: Samples requiring preservation were verified prior to sample analysis.

QA/QC CRITERIA: All analyses met method criteria, except as noted in the report with data qualifiers.

COMMENTS: All sample results are included in this report, even those previously reported under separate cover.

SUBCONTRACTED: No analyses were subcontracted to an outside laboratory.

LABORATORY ID	CLIENT ID	MATRIX
IPB2076-01	PSZB-53A-15	Soil
IPB2076-02	PSZB-53A-20	Soil
IPB2076-03	PSZB-53A-25	Soil
IPB2076-04	PSZB-53A-30	Soil
IPB2076-05	PSZB-53A-35	Soil
IPB2076-06	PSZB-53A-40	Soil
IPB2076-07	PIZB-06-5	Soil
IPB2076-08	PIZB-06-2.5	Soil
IPB2076-09	PIZB-06-1	Soil
IPB2076-10	PIZB-05-5	Soil

Del Mar Analytical, Irvine
Patty Mata
Project Manager



Del Mar Analytical

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2520 E. Sunset Rd. #3, Las Vegas, NV 89120 (702) 798-3620 FAX (702) 798-3621

Geomatrix-Corona
250 East Rincon Street, Suite 204
Corona, CA 92879
Attention: Rick Rees

Project ID: Aerojet Azusa
007190.004.1.7
Report Number: IPB2076

Sampled: 02/22/06
Received: 02/22/06

LABORATORY ID	CLIENT ID	MATRIX
IPB2076-11	PIZB-05-2.5	Soil
IPB2076-12	PIZB-05-1	Soil
IPB2076-13	PIZB-06-10	Soil
IPB2076-14	PIZB-06-7 5	Soil
IPB2076-15	PIZB-06-15	Soil
IPB2076-16	PIZB-06-20	Soil
IPB2076-17	PIZB-06-25	Soil
IPB2076-18	PSZB-68-5	Soil
IPB2076-19	PSZB-68-2.5	Soil
IPB2076-20	PSZB-68-1	Soil
IPB2076-21	PIZB-06-30	Soil
IPB2076-22	PIZB-06-35	Soil
IPB2076-23	PIZB-06-40	Soil
IPB2076-24	PSZB-69-5	Soil
IPB2076-25	PSZB-69-2.5	Soil
IPB2076-26	PSZB-69-1	Soil

Reviewed By:

Del Mar Analytical, Irvine
Patty Mata
Project Manager

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IPB2076 <Page 2 of 8>



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Geomatrix-Corona
250 East Rincon Street, Suite 204
Corona, CA 92879
Attention: Rick Rees

Project ID: Aerojet Azusa
007190.004.1.7
Report Number: IPB2076

Sampled: 02/22/06
Received: 02/22/06

INORGANICS

Analyte	Method	Batch	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IPB2076-01 (PSZB-53A-15 - Soil)								
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	6B24098	0.040	ND	0.995	2/24/2006	2/25/2006	
Sample ID: IPB2076-02 (PSZB-53A-20 - Soil)								
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	6B24098	0.040	ND	0.995	2/24/2006	2/25/2006	
Sample ID: IPB2076-03 (PSZB-53A-25 - Soil)								
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	6B24098	0.040	ND	1	2/24/2006	2/25/2006	
Sample ID: IPB2076-04 (PSZB-53A-30 - Soil)								
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	6B24098	0.040	ND	1	2/24/2006	2/25/2006	
Sample ID: IPB2076-05 (PSZB-53A-35 - Soil)								
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	6B24098	0.040	ND	1	2/24/2006	2/25/2006	
Sample ID: IPB2076-06 (PSZB-53A-40 - Soil)								
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	6B24098	0.040	ND	1	2/24/2006	2/25/2006	
Sample ID: IPB2076-07 (PIZB-06-5 - Soil)								
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	6B24098	0.040	0.30	0.998	2/24/2006	2/25/2006	
Sample ID: IPB2076-08 (PIZB-06-2.5 - Soil)								
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	6B24098	0.20	1.2	5	2/24/2006	2/27/2006	
Sample ID: IPB2076-09 (PIZB-06-1 - Soil)								
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	6B24098	0.040	0.42	1	2/24/2006	2/25/2006	
Sample ID: IPB2076-10 (PIZB-05-5 - Soil)								
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	6B24098	0.040	0.083	0.998	2/24/2006	2/25/2006	

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Patty Mata
Project Manager

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Geomatrix-Corona
250 East Rincon Street, Suite 204
Corona, CA 92879
Attention: Rick Rees

Project ID: Aerojet Azusa
007190.004.1.7
Report Number: IPB2076

Sampled: 02/22/06
Received: 02/22/06

INORGANICS

Analyte	Method	Batch	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IPB2076-11 (PIZB-05-2.5 - Soil)								
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	6B24098	0.040	0.32	0.998	2/24/2006	2/25/2006	
Sample ID: IPB2076-12 (PIZB-05-1 - Soil)								
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	6B24099	0.040	0.29	1	2/24/2006	2/24/2006	
Sample ID: IPB2076-13 (PIZB-06-10 - Soil)								
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	6B24099	0.040	ND	0.998	2/24/2006	2/24/2006	
Sample ID: IPB2076-14 (PIZB-06-7.5 - Soil)								
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	6B24099	0.040	0.040	0.998	2/24/2006	2/24/2006	
Sample ID: IPB2076-15 (PIZB-06-15 - Soil)								
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	6B24099	0.040	ND	0.998	2/24/2006	2/24/2006	
Sample ID: IPB2076-16 (PIZB-06-20 - Soil)								
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	6B24099	0.040	ND	0.998	2/24/2006	2/24/2006	
Sample ID: IPB2076-17 (PIZB-06-25 - Soil)								
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	6B24099	0.040	ND	1	2/24/2006	2/24/2006	
Sample ID: IPB2076-18 (PSZB-68-5 - Soil)								
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	6B24099	0.040	ND	1	2/24/2006	2/24/2006	
Sample ID: IPB2076-19 (PSZB-68-2.5 - Soil)								
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	6B24099	0.040	ND	0.995	2/24/2006	2/24/2006	
Sample ID: IPB2076-20 (PSZB-68-1 - Soil)								
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	6B24099	0.040	ND	1	2/24/2006	2/24/2006	

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Patty Mata
Project Manager

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Geomatrix-Corona
250 East Rincon Street, Suite 204
Corona, CA 92879
Attention: Rick Rees

Project ID: Aerojet Azusa
007190.004.1.7
Report Number: IPB2076

Sampled: 02/22/06
Received: 02/22/06

INORGANICS

Analyte	Method	Batch	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IPB2076-21 (PIZB-06-30 - Soil)								
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	6B24099	0.040	ND	0.998	2/24/2006	2/24/2006	
Sample ID: IPB2076-22 (PIZB-06-35 - Soil)								
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	6B24098	0.040	ND	1	2/24/2006	2/25/2006	
Sample ID: IPB2076-23 (PIZB-06-40 - Soil)								
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	6B24098	0.040	ND	1	2/24/2006	2/25/2006	
Sample ID: IPB2076-24 (PSZB-69-5 - Soil)								
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	6B24099	0.040	ND	0.998	2/24/2006	2/24/2006	
Sample ID: IPB2076-25 (PSZB-69-2.5 - Soil)								
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	6B24099	0.040	ND	0.995	2/24/2006	2/24/2006	
Sample ID: IPB2076-26 (PSZB-69-1 - Soil)								
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	6B24099	0.20	ND	5	2/24/2006	2/26/2006	RL-1

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Geomatrix-Corona
 250 East Rincon Street, Suite 204
 Corona, CA 92879
 Attention: Rick Rees

Project ID: Aerojet Azusa
 007190.004.1.7
 Report Number: IPB2076

Sampled: 02/22/06
 Received: 02/22/06

METHOD BLANK/QC DATA

INORGANICS

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC %REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 6B24098 Extracted: 02/24/06									
Blank Analyzed: 02/25/2006 (6B24098-BLK1)									
Perchlorate	ND	0.040	mg/kg						
LCS Analyzed: 02/25/2006 (6B24098-BS1)									
Perchlorate	0.526	0.040	mg/kg	0.500		105 85-115			
Matrix Spike Analyzed: 02/25/2006 (6B24098-MS1)									
Perchlorate	0.511	0.040	mg/kg	0.500	ND	102 80-120			
Matrix Spike Dup Analyzed: 02/25/2006 (6B24098-MSD1)									
Perchlorate	0.507	0.040	mg/kg	0.500	ND	101 80-120	1	20	
Batch: 6B24099 Extracted: 02/24/06									
Blank Analyzed: 02/24/2006 (6B24099-BLK1)									
Perchlorate	ND	0.040	mg/kg						
LCS Analyzed: 02/24/2006 (6B24099-BS1)									
Perchlorate	0.513	0.040	mg/kg	0.500		103 85-115			
Matrix Spike Analyzed: 02/24/2006 (6B24099-MS1)									
Perchlorate	0.888	0.040	mg/kg	0.498	0.29	120 80-120			
Matrix Spike Dup Analyzed: 02/24/2006 (6B24099-MSD1)									
Perchlorate	0.725	0.040	mg/kg	0.500	0.29	87 80-120	20	20	

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Attention: Rick Rees

Project ID: Aerojet Azusa
007190.004.1.7
Report Number: IPB2076

Sampled: 02/22/06
Received: 02/22/06

DATA QUALIFIERS AND DEFINITIONS

RL-1 Reporting limit raised due to sample matrix effects.
ND Analyte NOT DETECTED at or above the reporting limit or MDL, if MDL is specified.
RPD Relative Percent Difference

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Patty Mata
Project Manager

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Project ID: Aerojet Azusa
007190.004.1.7
Report Number: IPB2076

Sampled: 02/22/06
Received: 02/22/06

Certification Summary

Del Mar Analytical, Irvine

Method	Matrix	Nelac	California
EPA 314.0 MOD.	Soil	N/A	N/A

Nevada and NELAP provide analyte specific accreditations. Analyte specific information for Del Mar Analytical may be obtained by contacting the laboratory or visiting our website at www.testamericainc.com

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Patty Mata
Project Manager

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IPB2076 <Page 8 of 8>

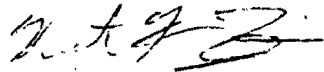
CHAIN-OF-CUSTODY RECORD

IPB2076

COR 10124

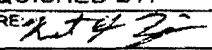
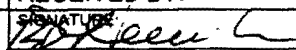
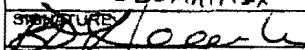

PROJECT NAME: AEROJET-AISA PERKINELMER ACC		DATE: 2/22/06		PAGE 1 OF 2	
PROJECT NUMBER: 7190 004 1.7		LABORATORY NAME: DEL MAR		CLIENT INFORMATION: AEROJET-AISA	
RESULTS TO: C. RICHARD REES		LABORATORY ADDRESS: 17461 DEERAN STE 10		REPORTING REQUIREMENTS:	
TURNAROUND TIME: STANDARD		IRVINE CA 92614			
SAMPLE SHIPMENT METHOD: COURIER		LABORATORY CONTACT: PATTI MATA		GEOTRACKER REQUIRED: YES <input type="radio"/> NO <input checked="" type="radio"/>	
		LABORATORY PHONE NUMBER: 949-261-1023		SITE SPECIFIC GLOBAL ID NO:	

SAMPLERS (SIGNATURE):



ANALYSES

DATE	TIME	SAMPLE NUMBER	EPA 314	5 DAY TURNAROUND	CONTAINER TYPE AND SIZE	Soil (S), Water (W), Vapor (V), or Other (O)	Filtered	Preservative Type	Cooled	MS/MSD	No of Containers	ADDITIONAL COMMENTS
2/22/06	8:50	PS2B-53A-15	X		GLASS 402	S			X		1	
2/22/06	9:03	PS2B-53A-20	X		" "	S			X		1	
2/22/06	9:11	PS2B-53A-25	X		" "	S			X		1	
2/22/06	9:18	PS2B-53A-30	X	X	" "	S			X		1	5 DAY TURNAROUND
2/22/06	9:23	PS2B-53A-35	X	X	" "	S			X		1	5 DAY TURNAROUND
2/22/06	9:28	PS2B-53A-40	X	X	" "	S			X		1	5 DAY TURNAROUND
2/22/06	9:47	PI2B-06-5	X		" "	S			X		1	
2/22/06	9:49	PI2B-06-2.5	X		" "	S			X		1	
2/22/06	9:52	PI2B-06-1	X		" "	S			X		1	
2/22/06	11:51	PI2B-05-5	X		" "	S			X		1	
2/22/06	11:54	PI2B-05-2.5	X		" "	S			X		1	
2/22/06	11:57	PI2B-05-1	X		" "	S			X		1	NAM
2/22/06	12:23	PI2B-06-10	X		" "	S			X		1	
2/22/06	12:23	PI2B-06-7.5	X		" "	S			X		1	
2/22/06	12:31	PI2B-06-15	X		" "	S			X		1	

RELINQUISHED BY:		DATE	TIME	RECEIVED BY:		DATE	TIME	TOTAL NUMBER OF CONTAINERS: 15	
SIGNATURE: 		2/22/06	12:31	SIGNATURE: 		2/22/06	12:31	SAMPLING COMMENTS:	
PRINTED NAME: KURT ZEILER				PRINTED NAME: KURT ZEILER					
COMPANY: GEOMATRIX				COMPANY: GEOMATRIX					
SIGNATURE: 		2/22/06	12:45	SIGNATURE: 		2/22/06	12:45	SAMPLING COMMENTS:	
PRINTED NAME: KURT ZEILER				PRINTED NAME: KURT ZEILER					
COMPANY: GEOMATRIX				COMPANY: GEOMATRIX					
SIGNATURE:				SIGNATURE:				250 East Rincon Street, Suite 204	
PRINTED NAME:				PRINTED NAME:				Corona, California 92879-1363	
COMPANY:				COMPANY:				Tel 951.273.7400 Fax 951.273.7420	



Geomatrix

CHAIN-OF-CUSTODY RECORD


COR 10125

PROJECT NAME: AEROJET-AISA PERKIN ELMER AGC				DATE: 2/22/06		PAGE 2 OF 2	
PROJECT NUMBER 7190.004 1.7		LABORATORY NAME: DEL MAR		CLIENT INFORMATION: AEROJET-AISA		REPORTING REQUIREMENTS	
RESULTS TO: G. RICHARD REES		LABORATORY ADDRESS: 17461 DERIAN STE 100					
TURNAROUND TIME: STANDARD		LABORATORY CONTACT: PATTE MATA					
SAMPLE SHIPMENT METHOD: COURIER		LABORATORY PHONE NUMBER: 949-261-1022		GEOTRACKER REQUIRED: YES		NO	
				SITE SPECIFIC GLOBAL ID NO			

SAMPLERS (SIGNATURE):			ANALYSES										CONTAINER TYPE AND SIZE		Soil (S), Water (W), Vapor (V), or Other (O)	Filtered	Preservative Type	Cooled	MS/MSD	No. of Containers	ADDITIONAL COMMENTS
DATE	TIME	SAMPLE NUMBER	EPA 314	5 DAY TURNAROUND																	
2/22/06	14:12	PI2B-06-20	X												GLASS 40Z	S			X	1	
2/22/06	14:24	PI2B-06-25	X												" "	S			X	1	
2/22/06	14:28	PI2B-06-PS2B-68-5	X												" "	S			X	1	
2/22/06	14:30	PS2B-68-2.5	X												" "	S			X	1	
2/22/06	14:32	PS2B-68-1	X												" "	S			X	1	
2/22/06	14:34	PI2B-06-30	X												" "	S			X	1	
2/22/06	14:41	PI2B-06-35	X	X											" "	S			X	1	5 DAY TURNAROUND
2/22/06	15:06	PI2B-06-40	X	X											" "	S			X	1	5 DAY TURNAROUND
2/22/06	16:01	PS2B-69-5	X												" "	S			X	1	
2/22/06	16:32	PS2B-69-2.5	X												" "	S			X	1	
2/22/06	16:34	PS2B-69-1	X												" "	S			X	1	

RELINQUISHED BY:		DATE	TIME	RECEIVED BY:		DATE	TIME	TOTAL NUMBER OF CONTAINERS: 11	
SIGNATURE: [Signature]		2/22/06	17:27	SIGNATURE: [Signature]		2/22/06	17:27	SAMPLING COMMENTS	
PRINTED NAME: KUAT ZETLER				PRINTED NAME: [Signature]					
COMPANY: GEOMATRIX				COMPANY: [Signature]					
SIGNATURE: [Signature]		2/22/06	18:45	SIGNATURE: [Signature]		2/22/06	18:45	@ 3	
PRINTED NAME: G. HERMANSTADT				PRINTED NAME: [Signature]					
COMPANY: DMAT				COMPANY: DEL MAR					
SIGNATURE:				SIGNATURE:					
PRINTED NAME:				PRINTED NAME:					
COMPANY:				COMPANY:					

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2520 E. Sunset Rd. #3, Las Vegas, NV 89120 (702) 798-3620 FAX (702) 798-3621

LABORATORY REPORT

Prepared For: Geomatrix-Corona
250 East Rincon Street, Suite 204
Corona, CA 92879
Attention: Rick Rees

Project: Aerojet Azusa
007190.004.1.7

Sampled: 02/22/06-02/23/06
Received: 02/23/06
Issued: 03/01/06 19:53

NELAP #01108CA California ELAP#1197 CSDLAC #10117

The results listed within this Laboratory Report pertain only to the samples tested in the laboratory. The analyses contained in this report were performed in accordance with the applicable certifications as noted. All soil samples are reported on a wet weight basis unless otherwise noted in the report. This Laboratory Report is confidential and is intended for the sole use of Del Mar Analytical and its client. This report shall not be reproduced, except in full, without written permission from Del Mar Analytical. The Chain of Custody, 1 page, is included and is an integral part of this report.

This entire report was reviewed and approved for release.

SAMPLE CROSS REFERENCE

LABORATORY ID	CLIENT ID	MATRIX
IPB2196-01	PIZB-06-45	Soil
IPB2196-02	PIZB-06-50	Soil
IPB2196-03	PIZB-06-60	Soil
IPB2196-04	PIZB-06-70	Soil
IPB2196-05	PIZB-06-80	Soil
IPB2196-06	PIZB-06-90	Soil
IPB2196-07	PIZB-06-100	Soil

Reviewed By:

Michele Chamberlin

Del Mar Analytical, Irvine
Michele Chamberlin For Patty Mata
Project Manager



Del Mar Analytical

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2520 E Sunset Rd. #3, Las Vegas, NV 89120 (702) 798-3620 FAX (702) 798-3621

Geomatrix-Corona
250 East Rincon Street, Suite 204
Corona, CA 92879
Attention: Rick Rees

Project ID: Aerojet Azusa
007190.004.1.7
Report Number: IPB2196

Sampled: 02/22/06-02/23/06
Received: 02/23/06

INORGANICS

Analyte	Method	Batch	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IPB2196-01 (PIZB-06-45 - Soil)				Sampled: 02/22/06				
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	6B24098	0.040	ND	1	2/24/2006	2/25/2006	
Sample ID: IPB2196-02 (PIZB-06-50 - Soil)				Sampled: 02/23/06				
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	6B24098	0.040	ND	1	2/24/2006	2/25/2006	
Sample ID: IPB2196-03 (PIZB-06-60 - Soil)				Sampled: 02/23/06				
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	6B24098	0.040	ND	1	2/24/2006	2/25/2006	
Sample ID: IPB2196-04 (PIZB-06-70 - Soil)				Sampled: 02/23/06				
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	6B24098	0.040	ND	1	2/24/2006	2/25/2006	
Sample ID: IPB2196-05 (PIZB-06-80 - Soil)				Sampled: 02/23/06				
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	6B24098	0.040	ND	1	2/24/2006	2/25/2006	
Sample ID: IPB2196-06 (PIZB-06-90 - Soil)				Sampled: 02/23/06				
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	6B24098	0.040	ND	1	2/24/2006	2/25/2006	
Sample ID: IPB2196-07 (PIZB-06-100 - Soil)				Sampled: 02/23/06				
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	6B24098	0.040	ND	1	2/24/2006	2/25/2006	

Del Mar Analytical, Irvine
Michele Chamberlin For Patty Mata
Project Manager

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Geomatrix-Corona
250 East Rincon Street, Suite 204
Corona, CA 92879
Attention: Rick Rees

Project ID: Aerojet Azusa
007190.004.1.7
Report Number: IPB2196

Sampled: 02/22/06-02/23/06
Received: 02/23/06

METHOD BLANK/QC DATA

INORGANICS

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 6B24098 Extracted: 02/24/06									
Blank Analyzed: 02/25/2006 (6B24098-BLK1)									
Perchlorate	ND	0.040	mg/kg						
LCS Analyzed: 02/25/2006 (6B24098-BS1)									
Perchlorate	0.526	0.040	mg/kg	0.500		105 85-115			
Matrix Spike Analyzed: 02/25/2006 (6B24098-MS1)									
Perchlorate	0.511	0.040	mg/kg	0.500	ND	102 80-120			
Matrix Spike Dup Analyzed: 02/25/2006 (6B24098-MSD1)									
Perchlorate	0.507	0.040	mg/kg	0.500	ND	101 80-120	1	20	

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Michele Chamberlin For Patty Mata
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Geomatrix-Corona
250 East Rincon Street, Suite 204
Corona, CA 92879
Attention: Rick Rees

Project ID: Aerojet Azusa
007190.004.1.7
Report Number: IPB2196

Sampled: 02/22/06-02/23/06
Received: 02/23/06

DATA QUALIFIERS AND DEFINITIONS

ND Analyte NOT DETECTED at or above the reporting limit or MDL, if MDL is specified.
RPD Relative Percent Difference

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Michele Chamberlin For Patty Mata
Project Manager

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IPB2196 <Page 4 of 5>



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Geomatrix-Corona
250 East Rincon Street, Suite 204
Corona, CA 92879
Attention: Rick Rees

Project ID. Aerojet Azusa
007190.004.1.7
Report Number. IPB2196

Sampled: 02/22/06-02/23/06
Received: 02/23/06

Certification Summary

Del Mar Analytical, Irvine

Method	Matrix	Nelac	California
EPA 314.0 MOD.	Soil	N/A	N/A

Nevada and NELAP provide analyte specific accreditations. Analyte specific information for Del Mar Analytical may be obtained by contacting the laboratory or visiting our website at www.testamericainc.com

Del Mar Analytical, Irvine
Michele Chamberlin For Patty Mata
Project Manager

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IPB2196 <Page 5 of 5>

CHAIN-OF-CUSTODY RECORD

IPB 2196


COR 10126

PROJECT NAME: AEROSSET-AISA PERKINELMER AOC				DATE: 2/23/06		PAGE: 1 OF 1	
PROJECT NUMBER: 7140.004 1.7		LABORATORY NAME: DEL MAR		CLIENT INFORMATION: AEROSSET-AISA		REPORTING REQUIREMENTS	
RESULTS TO: G. RILHARD REES		LABORATORY ADDRESS: 17461 DERIAN STE 100					
TURNAROUND TIME: 5 DAY TURNAROUND		IRVINE CA 92614					
SAMPLE SHIPMENT METHOD: COURIER		LABORATORY CONTACT: PATTE MATH		GEOTRACKER REQUIRED: YES		NO	
		LABORATORY PHONE NUMBER: 949.261-1022		SITE SPECIFIC GLOBAL ID NO			

SAMPLERS (SIGNATURE):			ANALYSES										CONTAINER TYPE AND SIZE		Soil (S), Water (W), Vapor (V), or Other (O)	Filtered	Preservative Type	Cooled	MS/MSD	No. of Containers	ADDITIONAL COMMENTS
DATE	TIME	SAMPLE NUMBER	EPA 314	5 DAY TURNAROUND	3 DAY TURNAROUND																
2/23/06	18:11	PIZB-06-45	X	X										GLASS 40Z	S			X		1	
2/23/06	8:07	PIZB-06-50	X	X										" "	S			X		1	
2/23/06	15:08	PIZB-06-60	X	X										" "	S			X		1	
2/23/06	15:42	PIZB-06-70	X	X										" "	S			X		1	
2/23/06	16:01	PIZB-06-80	X	X										" "	S			X		1	
2/23/06	16:41	PIZB-06-90	X	X										" "	S			X		1	
2/23/06	17:14	PIZB-06-100	X	X										" "	S			X		1	
NAM																					

RELINQUISHED BY:		DATE	TIME	RECEIVED BY:		DATE	TIME	TOTAL NUMBER OF CONTAINERS: 7	
SIGNATURE: [Signature]		2/23/06	17:50	SIGNATURE: [Signature]		2/23/06	19:10	SAMPLING COMMENTS: @ 5'	
PRINTED NAME: KURT ZEDLER				PRINTED NAME: Armando Herrera					
COMPANY: GEOMATRIX				COMPANY: Del Mar					
SIGNATURE: [Signature]				SIGNATURE:					
PRINTED NAME: D. KRAMSADER				PRINTED NAME:					
COMPANY: DINA				COMPANY:					
SIGNATURE: [Signature]				SIGNATURE:					
PRINTED NAME: D. KRAMSADER				PRINTED NAME:					
COMPANY: DINA				COMPANY:					

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LABORATORY REPORT

Prepared For: Geomatrix-Corona
250 East Rincon Street, Suite 204
Corona, CA 92879
Attention: Rick Rees

Project: Aerojet Azusa
007190.004.1.7

Sampled: 02/24/06
Received: 02/24/06
Issued: 03/04/06 16:37

NELAP #01108CA California ELAP#1197 CSDLAC #10117

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This entire report was reviewed and approved for release.

SAMPLE CROSS REFERENCE

LABORATORY ID	CLIENT ID	MATRIX
IPB2333-01	PIZB-05-7.5	Soil
IPB2333-02	PIZB-05-10	Soil
IPB2333-03	PIZB-05-15	Soil
IPB2333-04	PIZB-05-20	Soil
IPB2333-05	PIZB-05-25	Soil
IPB2333-06	PIZB-05-30	Soil
IPB2333-07	PIZB-05-35	Soil
IPB2333-08	PIZB-05-40	Soil
IPB2333-09	PIZB-05-45	Soil
IPB2333-10	PIZB-05-50	Soil
IPB2333-11	PIZB-05-60	Soil
IPB2333-12	PIZB-05-70	Soil
IPB2333-13	PIZB-05-80	Soil
IPB2333-14	PIZB-05-90	Soil
IPB2333-15	PIZB-05-100	Soil

Reviewed By:

Michele Chamberlin

Del Mar Analytical, Irvine
Michele Chamberlin For Patty Mata
Project Manager



Del Mar Analytical

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2520 E Sunset Rd. #3, Las Vegas, NV 89120 (702) 798-3620 FAX (702) 798-3621

Geomatrix-Corona
250 East Rincon Street, Suite 204
Corona, CA 92879
Attention: Rick Rees

Project ID: Aerojet Azusa
007190.004.1.7
Report Number: IPB2333

Sampled: 02/24/06
Received: 02/24/06

INORGANICS

Analyte	Method	Batch	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IPB2333-01 (PIZB-05-7.5 - Soil)								
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	6C01096	0.040	0.060	1	3/1/2006	3/2/2006	
Sample ID: IPB2333-02 (PIZB-05-10 - Soil)								
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	6C01096	0.040	0.065	1	3/1/2006	3/2/2006	
Sample ID: IPB2333-03 (PIZB-05-15 - Soil)								
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	6C01096	0.040	ND	1	3/1/2006	3/2/2006	
Sample ID: IPB2333-04 (PIZB-05-20 - Soil)								
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	6C01096	0.040	0.065	1	3/1/2006	3/2/2006	
Sample ID: IPB2333-05 (PIZB-05-25 - Soil)								
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	6C01096	0.040	0.12	1	3/1/2006	3/2/2006	
Sample ID: IPB2333-06 (PIZB-05-30 - Soil)								
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	6C01096	0.040	0.075	1	3/1/2006	3/2/2006	
Sample ID: IPB2333-07 (PIZB-05-35 - Soil)								
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	6C01096	0.040	0.064	1	3/1/2006	3/2/2006	
Sample ID: IPB2333-08 (PIZB-05-40 - Soil)								
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	6C01096	0.040	ND	1	3/1/2006	3/2/2006	
Sample ID: IPB2333-09 (PIZB-05-45 - Soil)								
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	6C01097	0.040	ND	1	3/1/2006	3/2/2006	
Sample ID: IPB2333-10 (PIZB-05-50 - Soil)								
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	6C01096	0.040	ND	1	3/1/2006	3/1/2006	

Del Mar Analytical, Irvine
Michele Chamberlin For Patty Mata
Project Manager

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IPB2333 <Page 2 of 6>



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Geomatrix-Corona
250 East Rincon Street, Suite 204
Corona, CA 92879
Attention: Rick Rees

Project ID: Aerojet Azusa
007190.004.1.7
Report Number: IPB2333

Sampled: 02/24/06
Received: 02/24/06

INORGANICS

Analyte	Method	Batch	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IPB2333-11 (PIZB-05-60 - Soil)								
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	6C01096	0.040	ND	1	3/1/2006	3/1/2006	
Sample ID: IPB2333-12 (PIZB-05-70 - Soil)								
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	6C01096	0.040	ND	1	3/1/2006	3/1/2006	
Sample ID: IPB2333-13 (PIZB-05-80 - Soil)								
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	6C01096	0.040	ND	1	3/1/2006	3/1/2006	
Sample ID: IPB2333-14 (PIZB-05-90 - Soil)								
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	6C01096	0.040	ND	1	3/1/2006	3/1/2006	
Sample ID: IPB2333-15 (PIZB-05-100 - Soil)								
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	6C01096	0.040	ND	1	3/1/2006	3/1/2006	

Del Mar Analytical, Irvine
Michele Chamberlin For Patty Mata
Project Manager

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IPB2333 <Page 3 of 6>



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Geomatrix-Corona
250 East Rincon Street, Suite 204
Corona, CA 92879
Attention: Rick Rees

Project ID: Aerojet Azusa
007190.004.1.7
Report Number: IPB2333

Sampled: 02/24/06
Received: 02/24/06

METHOD BLANK/QC DATA

INORGANICS

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC %REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 6C01096 Extracted: 03/01/06									
Blank Analyzed: 03/01/2006 (6C01096-BLK1)									
Perchlorate	ND	0.040	mg/kg						
LCS Analyzed: 03/01/2006 (6C01096-BS1)									
Perchlorate	0.533	0.040	mg/kg	0.500		107 85-115			
Matrix Spike Analyzed: 03/01/2006 (6C01096-MS1)									
Perchlorate	0.516	0.040	mg/kg	0.500	ND	103 80-120			
Matrix Spike Dup Analyzed: 03/01/2006 (6C01096-MSD1)									
Perchlorate	0.537	0.040	mg/kg	0.500	ND	107 80-120	4	20	
Batch: 6C01097 Extracted: 03/01/06									
Blank Analyzed: 03/02/2006 (6C01097-BLK1)									
Perchlorate	ND	0.040	mg/kg						
LCS Analyzed: 03/03/2006 (6C01097-BS1)									
Perchlorate	0.541	0.040	mg/kg	0.500		108 85-115			
Matrix Spike Analyzed: 03/02/2006 (6C01097-MS1)									
Perchlorate	0.548	0.040	mg/kg	0.500	0.019	106 80-120			
Matrix Spike Dup Analyzed: 03/02/2006 (6C01097-MSD1)									
Perchlorate	0.549	0.040	mg/kg	0.500	0.019	106 80-120	0	20	

Del Mar Analytical, Irvine
Michele Chamberlin For Patty Mata
Project Manager

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IPB2333 <Page 4 of 6>



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2520 E. Sunset Rd. #3, Las Vegas, NV 89120 (702) 798-3620 FAX (702) 798-3621

Geomatrix-Corona
250 East Rincon Street, Suite 204
Corona, CA 92879
Attention: Rick Rees

Project ID: Aerojet Azusa
007190.004.1.7
Report Number: IPB2333

Sampled: 02/24/06
Received: 02/24/06

DATA QUALIFIERS AND DEFINITIONS

ND Analyte NOT DETECTED at or above the reporting limit or MDL, if MDL is specified.
RPD Relative Percent Difference

Del Mar Analytical, Irvine
Michele Chamberlin For Patty Mata
Project Manager

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Geomatrix-Corona
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Corona, CA 92879
Attention: Rick Rees

Project ID: Aerojet Azusa
007190.004.1.7
Report Number: IPB2333

Sampled: 02/24/06
Received: 02/24/06

Certification Summary

Del Mar Analytical, Irvine

Method	Matrix	Nelac	California
EPA 314.0 MOD.	Soil	N/A	N/A

Nevada and NELAP provide analyte specific accreditations. Analyte specific information for Del Mar Analytical may be obtained by contacting the laboratory or visiting our website at www.testamericainc.com

Del Mar Analytical, Irvine
Michele Chamberlin For Patty Mata
Project Manager

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IPB2333 <Page 6 of 6>

COR 10127

intact 4.1

LABORATORY REPORT

Prepared For: Geomatrix-Corona
250 East Rincon Street, Suite 204
Corona, CA 92879
Attention: Rick Rees

Project: Aerojet Azusa
007190.004.1.7

Sampled: 02/27/06
Received: 02/27/06
Issued: 03/04/06 16:43

NELAP #01108CA California ELAP#1197 CSDLAC #10117

The results listed within this Laboratory Report pertain only to the samples tested in the laboratory. The analyses contained in this report were performed in accordance with the applicable certifications as noted. All soil samples are reported on a wet weight basis unless otherwise noted in the report. This Laboratory Report is confidential and is intended for the sole use of Del Mar Analytical and its client. This report shall not be reproduced, except in full, without written permission from Del Mar Analytical. The Chain of Custody, 1 page, is included and is an integral part of this report. This entire report was reviewed and approved for release.

CASE NARRATIVE

SAMPLE RECEIPT: Samples were received intact, at 5°C, on ice and with chain of custody documentation.

HOLDING TIMES: All samples were analyzed within prescribed holding times and/or in accordance with the Del Mar Analytical Sample Acceptance Policy unless otherwise noted in the report.

PRESERVATION: Samples requiring preservation were verified prior to sample analysis.


QA/QC CRITERIA: All analyses met method criteria, except as noted in the report with data qualifiers.

COMMENTS: Enclosed are results for all samples except IPB2465-07 and IPB2465-08. Results for those samples will be sent under separate cover.

SUBCONTRACTED: No analyses were subcontracted to an outside laboratory.

LABORATORY ID	CLIENT ID	MATRIX
IPB2465-01	PIZB-01-35	Soil
IPB2465-02	PIZB-01-40	Soil
IPB2465-03	PIZB-01-45	Soil
IPB2465-04	PIZB-01-50	Soil
IPB2465-05	PIZB-01-60	Soil
IPB2465-06	PIZB-01-70	Soil
IPB2465-09	PIZB-01-100	Soil

Reviewed By:



Del Mar Analytical, Irvine
Michele Chamberlin For Patty Mata
Project Manager



Del Mar Analytical

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2520 E Sunset Rd #3, Las Vegas, NV 89120 (702) 798-3620 FAX (702) 798-3621

Geomatrix-Corona
250 East Rincon Street, Suite 204
Corona, CA 92879
Attention: Rick Rees

Project ID: Aerojet Azusa
007190.004.1.7
Report Number: IPB2465

Sampled: 02/27/06
Received: 02/27/06

INORGANICS

Analyte	Method	Batch	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IPB2465-01 (PIZB-01-35 - Soil)								
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	6C01097	0.040	0.94	1	3/1/2006	3/2/2006	
Sample ID: IPB2465-02 (PIZB-01-40 - Soil)								
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	6C01097	0.40	2.1	10	3/1/2006	3/3/2006	
Sample ID: IPB2465-03 (PIZB-01-45 - Soil)								
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	6C01097	0.20	1.7	5	3/1/2006	3/3/2006	
Sample ID: IPB2465-04 (PIZB-01-50 - Soil)								
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	6C01096	0.040	0.97	1	3/1/2006	3/1/2006	
Sample ID: IPB2465-05 (PIZB-01-60 - Soil)								
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	6C01096	0.040	0.88	1	3/1/2006	3/1/2006	
Sample ID: IPB2465-06 (PIZB-01-70 - Soil)								
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	6C01096	0.040	0.71	1	3/1/2006	3/2/2006	
Sample ID: IPB2465-09 (PIZB-01-100 - Soil)								
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	6C01096	0.040	0.88	1	3/1/2006	3/2/2006	

Del Mar Analytical, Irvine
Michele Chamberlin For Patty Mata
Project Manager

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IPB2465 <Page 2 of 5>



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Geomatrix-Corona
 250 East Rincon Street, Suite 204
 Corona, CA 92879
 Attention: Rick Rees

Project ID: Aerojet Azusa
 007190.004.1.7
 Report Number: IPB2465

Sampled: 02/27/06
 Received: 02/27/06

METHOD BLANK/QC DATA

INORGANICS

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 6C01096 Extracted: 03/01/06									
Blank Analyzed: 03/01/2006 (6C01096-BLK1)									
Perchlorate	ND	0.040	mg/kg						
LCS Analyzed: 03/01/2006 (6C01096-BS1)									
Perchlorate	0.533	0.040	mg/kg	0.500		107 85-115			
Matrix Spike Analyzed: 03/01/2006 (6C01096-MS1)									
Perchlorate	0.516	0.040	mg/kg	0.500	ND	103 80-120			
Matrix Spike Dup Analyzed: 03/01/2006 (6C01096-MSD1)									
Perchlorate	0.537	0.040	mg/kg	0.500	ND	107 80-120	4	20	
Batch: 6C01097 Extracted: 03/01/06									
Blank Analyzed: 03/02/2006 (6C01097-BLK1)									
Perchlorate	ND	0.040	mg/kg						
LCS Analyzed: 03/03/2006 (6C01097-BS1)									
Perchlorate	0.541	0.040	mg/kg	0.500		108 85-115			
Matrix Spike Analyzed: 03/02/2006 (6C01097-MS1)									
Perchlorate	0.548	0.040	mg/kg	0.500	0.019	106 80-120			
Matrix Spike Dup Analyzed: 03/02/2006 (6C01097-MSD1)									
Perchlorate	0.549	0.040	mg/kg	0.500	0.019	106 80-120	0	20	

Del Mar Analytical, Irvine
 Michele Chamberlin For Patty Mata
 Project Manager

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2520 E Sunset Rd #3, Las Vegas, NV 89120 (702) 798-3620 FAX (702) 798-3621

Geomatrix-Corona

250 East Rincon Street, Suite 204

Corona, CA 92879

Attention: Rick Rees

Project ID: Aerojet Azusa

007190.004.1.7

Report Number: IPB2465

Sampled: 02/27/06

Received: 02/27/06

DATA QUALIFIERS AND DEFINITIONS

ND Analyte NOT DETECTED at or above the reporting limit or MDL, if MDL is specified.

RPD Relative Percent Difference

Del Mar Analytical, Irvine
Michele Chamberlin For Patty Mata
Project Manager

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IPB2465 <Page 4 of 5>



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Geomatrix-Corona
250 East Rincon Street, Suite 204
Corona, CA 92879
Attention: Rick Rees

Project ID: Aerojet Azusa
007190.004.1.7
Report Number: IPB2465

Sampled: 02/27/06
Received: 02/27/06

Certification Summary

Del Mar Analytical, Irvine

Method	Matrix	Nelac	California
EPA 314.0 MOD	Soil	N/A	N/A

Nevada and NELAP provide analyte specific accreditations. Analyte specific information for Del Mar Analytical may be obtained by contacting the laboratory or visiting our website at www.testamericainc.com

Del Mar Analytical, Irvine
Michele Chamberlin For Patty Mata
Project Manager

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IPB2465 <Page 5 of 5>

161

 **Geomatrix**



LABORATORY REPORT

Prepared For: Geomatrix-Corona
250 East Rincon Street, Suite 204
Corona, CA 92879
Attention: Rick Rees

Project: Aerojet Azusa
007190.004.1.7

Sampled: 02/27/06
Received: 02/27/06
Issued: 03/06/06 13:59

NELAP #01108CA California ELAP#1197 CSDLAC #10117

The results listed within this Laboratory Report pertain only to the samples tested in the laboratory. The analyses contained in this report were performed in accordance with the applicable certifications as noted. All soil samples are reported on a wet weight basis unless otherwise noted in the report. This Laboratory Report is confidential and is intended for the sole use of Del Mar Analytical and its client. This report shall not be reproduced, except in full, without written permission from Del Mar Analytical. The Chain of Custody, 1 page, is included and is an integral part of this report.

This entire report was reviewed and approved for release.

CASE NARRATIVE

SAMPLE RECEIPT: Samples were received intact, at 5°C, on ice and with chain of custody documentation.

HOLDING TIMES: All samples were analyzed within prescribed holding times and/or in accordance with the Del Mar Analytical Sample Acceptance Policy unless otherwise noted in the report.

PRESERVATION: Samples requiring preservation were verified prior to sample analysis.

QA/QC CRITERIA: All analyses met method criteria, except as noted in the report with data qualifiers.

COMMENTS: Enclosed are results for samples IPB2465-07 and IPB2465-08. Results for all other samples were sent under separate cover

SUBCONTRACTED: No analyses were subcontracted to an outside laboratory.

LABORATORY ID

IPB2465-07

IPB2465-08

CLIENT ID

PIZB-01-80

PIZB-01-90

MATRIX

Soil

Soil

Reviewed By:

Del Mar Analytical, Irvine
Patty Mata
Project Manager



Del Mar Analytical

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Geomatrix-Corona
250 East Rincon Street, Suite 204
Corona, CA 92879
Attention: Rick Rees

Project ID: Aerojet Azusa
007190.004.1.7
Report Number: IPB2465

Sampled: 02/27/06
Received: 02/27/06

INORGANICS

Analyte	Method	Batch	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IPB2465-07 (PIZB-01-80 - Soil)								
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	6C01096	0.20	1.3	5	3/1/2006	3/2/2006	
Sample ID: IPB2465-08 (PIZB-01-90 - Soil)								
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	6C01096	0.20	0.99	5	3/1/2006	3/2/2006	

Del Mar Analytical, Irvine
Patty Mata
Project Manager

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IPB2465 <Page 2 of 5>



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Geomatrix-Corona
250 East Rincon Street, Suite 204
Corona, CA 92879
Attention: Rick Rees

Project ID: Aerojet Azusa
007190.004.1.7
Report Number: IPB2465

Sampled: 02/27/06
Received: 02/27/06

METHOD BLANK/QC DATA

INORGANICS

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 6C01096 Extracted: 03/01/06									
Blank Analyzed: 03/01/2006 (6C01096-BLK1)									
Perchlorate	ND	0.040	mg/kg						
LCS Analyzed: 03/01/2006 (6C01096-BS1)									
Perchlorate	0.533	0.040	mg/kg	0.500		107 85-115			
Matrix Spike Analyzed: 03/01/2006 (6C01096-MS1)									
Perchlorate	0.516	0.040	mg/kg	0.500	ND	103 80-120			
Matrix Spike Dup Analyzed: 03/01/2006 (6C01096-MSD1)									
Perchlorate	0.537	0.040	mg/kg	0.500	ND	107 80-120	4	20	

Del Mar Analytical, Irvine
Patty Mata
Project Manager

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2520 E. Sunset Rd. #3, Las Vegas, NV 89120 (702) 798-3620 FAX (702) 798-3621

Geomatrix-Corona
250 East Rincon Street, Suite 204
Corona, CA 92879
Attention: Rick Rees

Project ID: Aerojet Azusa
007190.004.1.7
Report Number: IPB2465

Sampled: 02/27/06
Received: 02/27/06

DATA QUALIFIERS AND DEFINITIONS

ND Analyte NOT DETECTED at or above the reporting limit or MDL, if MDL is specified.
RPD Relative Percent Difference

Del Mar Analytical, Irvine
Patty Mata
Project Manager

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IPB2465 <Page 4 of 5>



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2520 E. Sunset Rd. #3, Las Vegas, NV 89120 (702) 798-3620 FAX (702) 798-3621

Geomatrix-Corona
250 East Rincon Street, Suite 204
Corona, CA 92879
Attention: Rick Rees

Project ID: Aerojet Azusa
007190.004.1.7
Report Number: IPB2465

Sampled: 02/27/06
Received: 02/27/06

Certification Summary

Del Mar Analytical, Irvine

Method	Matrix	Nelac	California
EPA 314.0 MOD.	Soil	N/A	N/A

Nevada and NELAP provide analyte specific accreditations. Analyte specific information for Del Mar Analytical may be obtained by contacting the laboratory or visiting our website at www.testamericainc.com

Del Mar Analytical, Irvine
Patty Mata
Project Manager

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IPB2465 <Page 5 of 5>

161





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LABORATORY REPORT

Prepared For: Geomatrix-Corona
250 East Rincon Street, Suite 204
Corona, CA 92879
Attention: Rick Rees

Project: Aerojet Azusa
007190.004.1.7

Sampled: 02/28/06
Received: 02/28/06
Issued: 03/04/06 16:39

NELAP #01108CA California ELAP#1197 CSDLAC #10117

The results listed within this Laboratory Report pertain only to the samples tested in the laboratory. The analyses contained in this report were performed in accordance with the applicable certifications as noted. All soil samples are reported on a wet weight basis unless otherwise noted in the report. This Laboratory Report is confidential and is intended for the sole use of Del Mar Analytical and its client. This report shall not be reproduced, except in full, without written permission from Del Mar Analytical. The Chain of Custody, 1 page, is included and is an integral part of this report.
This entire report was reviewed and approved for release.

SAMPLE CROSS REFERENCE

LABORATORY ID	CLIENT ID	MATRIX
IPB2640-01	PIZB-02-35	Soil
IPB2640-02	PIZB-02-40	Soil
IPB2640-03	PIZB-02-45	Soil
IPB2640-04	PIZB-02-50	Soil
IPB2640-05	PIZB-02-60	Soil
IPB2640-06	PIZB-02-70	Soil
IPB2640-07	PIZB-02-80	Soil
IPB2640-08	PIZB-02-90	Soil
IPB2640-09	PIZB-02-100	Soil

Reviewed By:

Michele Chamberlin

Del Mar Analytical, Irvine
Michele Chamberlin For Patty Mata
Project Manager



Del Mar Analytical

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2520 E. Sunset Rd. #3, Las Vegas, NV 89120 (702) 798-3620 FAX (702) 798-3621

Geomatrix-Corona
250 East Rincon Street, Suite 204
Corona, CA 92879
Attention: Rick Rees

Project ID: Aerojet Azusa
007190.004.1.7
Report Number: IPB2640

Sampled: 02/28/06
Received: 02/28/06

INORGANICS

Analyte	Method	Batch	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IPB2640-01 (PIZB-02-35 - Soil)								
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	6C01097	0.040	0.042	0.998	3/1/2006	3/2/2006	
Sample ID: IPB2640-02 (PIZB-02-40 - Soil)								
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	6C01097	0.040	0.087	0.998	3/1/2006	3/2/2006	
Sample ID: IPB2640-03 (PIZB-02-45 - Soil)								
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	6C01097	0.040	0.041	0.998	3/1/2006	3/2/2006	
Sample ID: IPB2640-04 (PIZB-02-50 - Soil)								
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	6C01097	0.040	0.10	0.998	3/1/2006	3/2/2006	
Sample ID: IPB2640-05 (PIZB-02-60 - Soil)								
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	6C01097	0.040	0.28	0.998	3/1/2006	3/2/2006	
Sample ID: IPB2640-06 (PIZB-02-70 - Soil)								
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	6C01097	0.040	ND	0.995	3/1/2006	3/2/2006	
Sample ID: IPB2640-07 (PIZB-02-80 - Soil)								
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	6C01097	0.040	0.088	0.995	3/1/2006	3/2/2006	
Sample ID: IPB2640-08 (PIZB-02-90 - Soil)								
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	6C01097	0.040	ND	0.998	3/1/2006	3/2/2006	
Sample ID: IPB2640-09 (PIZB-02-100 - Soil)								
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	6C01097	0.040	0.055	0.998	3/1/2006	3/2/2006	

Del Mar Analytical, Irvine
Michele Chamberlin For Patty Mata
Project Manager

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IPB2640 <Page 2 of 5>



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9830 South 51st St., Suite B-120, Phoenix, AZ 85044 (480) 785-0043 FAX (480) 785-0851
2520 E. Sunset Rd. #3, Las Vegas, NV 89120 (702) 798-3620 FAX (702) 798-3621

Geomatrix-Corona
250 East Rincon Street, Suite 204
Corona, CA 92879
Attention: Rick Rees

Project ID: Aerojet Azusa
.007190.004.1.7
Report Number: IPB2640

Sampled: 02/28/06
Received: 02/28/06

METHOD BLANK/QC DATA

INORGANICS

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 6C01097 Extracted: 03/01/06									
Blank Analyzed: 03/02/2006 (6C01097-BLK1)									
Perchlorate	ND	0.040	mg/kg						
LCS Analyzed: 03/03/2006 (6C01097-BS1)									
Perchlorate	0.541	0.040	mg/kg	0.500		108 85-115			
Matrix Spike Analyzed: 03/02/2006 (6C01097-MS1)									
Perchlorate	0.548	0.040	mg/kg	0.500	0.019	106 80-120			
Matrix Spike Dup Analyzed: 03/02/2006 (6C01097-MSD1)									
Perchlorate	0.549	0.040	mg/kg	0.500	0.019	106 80-120	0	20	

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Michele Chamberlin For Patty Mata
Project Manager

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Geomatrix-Corona
250 East Rincon Street, Suite 204
Corona, CA 92879
Attention: Rick Rees

Project ID: Aerojet Azusa
007190.004.1.7
Report Number: IPB2640

Sampled: 02/28/06
Received: 02/28/06

DATA QUALIFIERS AND DEFINITIONS

ND Analyte NOT DETECTED at or above the reporting limit or MDL, if MDL is specified.
RPD Relative Percent Difference

Del Mar Analytical, Irvine
Michele Chamberlin For Patty Mata
Project Manager

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IPB2640 <Page 4 of 5>



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Geomatrix-Corona
250 East Rincon Street, Suite 204
Corona, CA 92879
Attention: Rick Rees

Project ID: Aerojet Azusa
007190.004.1.7
Report Number: IPB2640

Sampled: 02/28/06
Received: 02/28/06

Certification Summary

Del Mar Analytical, Irvine

Method	Matrix	Nelap	California
EPA 314.0 MOD.	Soil	N/A	N/A

Nevada and NELAP provide analyte specific accreditations. Analyte specific information for Del Mar Analytical may be obtained by contacting the laboratory or visiting our website at www.testamericainc.com

Del Mar Analytical, Irvine
Michele Chamberlin For Patty Mata
Project Manager

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IPB2640 <Page 5 of 5>

130 I973.264C COR 10129



Geomatrix



LABORATORY REPORT

Prepared For: Geomatrix-Corona
250 East Rincon Street, Suite 204
Corona, CA 92879
Attention: Rick Rees

Project: Aerojet Azusa
007190.004.1.7

Sampled: 03/01/06
Received: 03/02/06
Issued: 03/07/06 09:50

NELAP #01108CA California ELAP#1197 CSDLAC #10117

The results listed within this Laboratory Report pertain only to the samples tested in the laboratory. The analyses contained in this report were performed in accordance with the applicable certifications as noted. All soil samples are reported on a wet weight basis unless otherwise noted in the report. This Laboratory Report is confidential and is intended for the sole use of Del Mar Analytical and its client. This report shall not be reproduced, except in full, without written permission from Del Mar Analytical. The Chain(s) of Custody, 2 pages, are included and are an integral part of this report. This entire report was reviewed and approved for release.

CASE NARRATIVE

SAMPLE RECEIPT: Samples were received intact, at 4°C, on ice and with chain of custody documentation.

HOLDING TIMES: All samples were analyzed within prescribed holding times and/or in accordance with the Del Mar Analytical Sample Acceptance Policy unless otherwise noted in the report.

PRESERVATION: Samples requiring preservation were verified prior to sample analysis.

QA/QC CRITERIA: All analyses met method criteria, except as noted in the report with data qualifiers.

COMMENTS: Only the rush perchlorate sample results are included in this report. All other results will be sent under separate cover when complete.

SUBCONTRACTED: No analyses were subcontracted to an outside laboratory.

LABORATORY ID	CLIENT ID	MATRIX
IPC0311-01	PIZB-03-70	Soil
IPC0311-02	PIZB-03-80	Soil
IPC0311-03	PIZB-03-90	Soil
IPC0311-04	PIZB-03-100	Soil

Reviewed By:

Del Mar Analytical, Irvine
Patty Mata
Project Manager



Del Mar Analytical

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Geomatrix-Corona
250 East Rincon Street, Suite 204
Corona, CA 92879
Attention: Rick Rees

Project ID: Aerojet Azusa
007190.004.1.7
Report Number: IPC0311

Sampled: 03/01/06
Received: 03/02/06

INORGANICS

Analyte	Method	Batch	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IPC0311-01 (PIZB-03-70 - Soil)				Sampled: 03/01/06				
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	6C03128	0.040	0.064	0.998	3/3/2006	3/4/2006	
Sample ID: IPC0311-02 (PIZB-03-80 - Soil)				Sampled: 03/01/06				
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	6C03128	0.040	0.073	0.998	3/3/2006	3/4/2006	
Sample ID: IPC0311-03 (PIZB-03-90 - Soil)				Sampled: 03/01/06				
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	6C03128	0.040	ND	0.998	3/3/2006	3/4/2006	
Sample ID: IPC0311-04 (PIZB-03-100 - Soil)				Sampled: 03/01/06				
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	6C03128	0.040	ND	0.998	3/3/2006	3/4/2006	

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Patty Mata
Project Manager

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Geomatrix-Corona
250 East Rincon Street, Suite 204
Corona, CA 92879
Attention: Rick Rees

Project ID: Aerojet Azusa
007190.004.1.7
Report Number: IPC0311

Sampled: 03/01/06
Received: 03/02/06

METHOD BLANK/QC DATA

INORGANICS

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 6C03128 Extracted: 03/03/06									
Blank Analyzed: 03/04/2006 (6C03128-BLK1)									
Perchlorate	ND	0.040	mg/kg						
LCS Analyzed: 03/04/2006 (6C03128-BS1)									
Perchlorate	0.514	0.040	mg/kg	0.500		103 85-115			
Matrix Spike Analyzed: 03/04/2006 (6C03128-MS1)									
Perchlorate	0.572	0.040	mg/kg	0.499	0.064	102 80-120			
Matrix Spike Dup Analyzed: 03/04/2006 (6C03128-MSD1)									
Perchlorate	0.574	0.040	mg/kg	0.499	0.064	102 80-120	0	20	

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Geomatrix-Corona
250 East Rincon Street, Suite 204
Corona, CA 92879
Attention: Rick Rees

Project ID: Aerojet Azusa
007190.004.1.7
Report Number: IPC0311

Sampled: 03/01/06
Received: 03/02/06

DATA QUALIFIERS AND DEFINITIONS

ND Analyte NOT DETECTED at or above the reporting limit or MDL, if MDL is specified
RPD Relative Percent Difference

Del Mar Analytical, Irvine
Patty Mata
Project Manager

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Geomatrix-Corona
250 East Rincon Street, Suite 204
Corona, CA 92879
Attention: Rick Rees

Project ID: Aerojet Azusa
007190.004.1 7
Report Number: IPC0311

Sampled: 03/01/06
Received: 03/02/06

Certification Summary

Del Mar Analytical, Irvine

Method	Matrix	Nelac	California
EPA 314.0 MOD.	Soil	N/A	N/A

Nevada and NELAP provide analyte specific accreditations. Analyte specific information for Del Mar Analytical may be obtained by contacting the laboratory or visiting our website at www.testamericainc.com

Del Mar Analytical, Irvine
Patty Mata
Project Manager


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IPC0311 <Page 5 of 5>


CHAIN-OF-CUSTODY RECORD

TQC-0311

COR 10131

PROJECT NAME: AEROJET - AISA PERKIL ELMER AOC			DATE: 3-1-06/3-2-06		PAGE 1 OF 2				
PROJECT NUMBER: 7190.004			LABORATORY NAME: DEL MAR ANALYTICAL		CLIENT INFORMATION: AEROJET - AISA				
RESULTS TO: Rick ZEGS			LABORATORY ADDRESS: 17461 DELIAN ST.		REPORTING REQUIREMENTS:				
TURNAROUND TIME: SEE COMMENTS			IRVINE, CA 92614						
SAMPLE SHIPMENT METHOD: COURIER			LABORATORY CONTACT: PATTI MADA		GEOTRACKER REQUIRED: YES (NO)				
			LABORATORY PHONE NUMBER: 949-261-1022		SITE SPECIFIC GLOBAL ID NO:				
SAMPLERS (SIGNATURE): PATTI			ANALYSES						
DATE	TIME	SAMPLE NUMBER	EPA 314		CONTAINER TYPE AND SIZE	Soil (S), Water (W), Vapor (V), or Other (O)			
3-1-06	15:44	PI2B-03-70	X		40Z. GLASS JAR	S			
3-1-06	16:01	PI2B-03-80	X		" "	S			
3-1-06	16:20	PI2B-03-90	X		" "	S			
3-1-06	16:41	PI2B-03-100	X		" "	S			
3-2-06	11:06	PS2B-52-1	X		" "	S			
3-2-06	11:10	PS2B-52-2.5	X		" "	S			
3-2-06	11:12	PS2B-52-5	X		" "	S			
3-2-06	11:16	PS2B-52-7.5	X		" "	S			
3-2-06	11:21	PS2B-52-10	X		" "	S			
3-2-06	11:27	PS2B-52-15	X		" "	S			
3-2-06	11:33	PS2B-52-20	X		" "	S			
3-2-06	11:38	PS2B-52-25	X		" "	S			
3-2-06	11:45	PS2B-52-30	X		" "	S			
3-2-06	11:52	PS2B-52-35	X		" "	S			
3-2-06	11:58	PS2B-52-40	X		" "	S			
RELINQUISHED BY:		DATE	TIME	RECEIVED BY:		DATE	TIME	TOTAL NUMBER OF CONTAINERS:	15
SIGNATURE: Ana Hernandez		3/2/06	1658	SIGNATURE: Jon Power		3/2/06	1658	SAMPLING COMMENTS:	
PRINTED NAME: Ana Hernandez				PRINTED NAME: Jon Power					
COMPANY: Geomatrix Consultants		3/2/06	1810	SIGNATURE: Armando Herrera		3/2/06	1810		
PRINTED NAME: Jon Power				PRINTED NAME: Armando Herrera					
COMPANY: DMAT				COMPANY: Del Mar					
SIGNATURE:				SIGNATURE:					
PRINTED NAME:				PRINTED NAME:					
COMPANY:				COMPANY:					
250 East Rincon Street, Suite 204 Corona, California 92879-1363 Tel 951.273.7400 Fax 951.273.7420								 Geomatrix	

COR 10132

PROJECT NAME: AEROJET-AISA			PERKIN ELMER A-01			DATE: 3-2-06			PAGE 2 OF 2				
PROJECT NUMBER: 7190.004			LABORATORY NAME: DEL MAR ANALYTICAL			CLIENT INFORMATION: AEROJET-AISA			REPORTING REQUIREMENTS				
RESULTS TO: Rick REES			LABORATORY ADDRESS: 17461 DENALI ST										
TURNAROUND TIME: SEE COMMENTS			IRVING, CA 92614										
SAMPLE SHIPMENT METHOD: COURIER			LABORATORY CONTACT: PATTI MATA			GEOTRACKER REQUIRED: YES			ID: 10				
			LABORATORY PHONE NUMBER: 949-261-1022						SITE SPECIFIC GLOBAL ID NO				
SAMPLERS (SIGNATURE):			ANALYSES										
Pati JRC Ana Stumpfle													
DATE	TIME	SAMPLE NUMBER	EPA 314			CONTAINER TYPE AND SIZE	Soil (S), Water (W), Vapor (V), or Other (O)	Filtered	Preservative Type	Cooled	MS/MSD	No. of Containers	ADDITIONAL COMMENTS
3-2-06	13:26	PS2B-48-1	X			4 oz Glass Jar	S			X		1	NORMAL TAT
3-2-06	13:27	PS2B-48-2.5	X			" "	S			X		1	NORMAL TAT
3-2-06	13:29	PS2B-48-5	X			" "	S			X		1	NORMAL TAT
3-2-06	13:31	PS2B-48-7.5	X			" "	S			X		1	NORMAL TAT
3-2-06	13:34	PS2B-48-10	X			" "	S			X		1	NORMAL TAT
3-2-06	13:43	PS2B-48-15	X			" "	S			X		1	NORMAL TAT
3-2-06	13:50	PS2B-48-20	X			" "	S			X		1	NORMAL TAT
3-2-06	14:10	PS2B-48-25	X			" "	S			X		1	NORMAL TAT
3-2-06	14:14	PS2B-48-30	X			" "	S			X		1	NORMAL TAT
3-2-06	14:25	PS2B-48-35	X			" "	S			X		1	NORMAL TAT
3-2-06	14:30	PS2B-48-40	X			" "	S			X		1	NORMAL TAT
AC 3/2/06													
RELINQUISHED BY:			DATE	TIME	RECEIVED BY:	DATE	TIME	TOTAL NUMBER OF CONTAINERS					
SIGNATURE: Ana Stumpfle			3/2/06	1658	SIGNATURE: Jon Power	3/2/06	1658	SAMPLING COMMENTS					
PRINTED NAME: Ana Gonzalez					PRINTED NAME: Jon Power								
COMPANY: Geomatrix Consultants					COMPANY: DMTI								
SIGNATURE: Jon Power			3/2/06	1810	SIGNATURE: Fernando Herrera	3/2/06	1810	4°C					
PRINTED NAME: Jon Power					PRINTED NAME: Fernando Herrera								
COMPANY: DMTI					COMPANY: Del Mar								
SIGNATURE:					SIGNATURE:			250 East Rincon Street, Suite 204 Corona, California 92879-1363 Tel 951.273.7400 Fax 951.273.7420					
PRINTED NAME:					PRINTED NAME:								
COMPANY:					COMPANY:								
								 Geomatrix					



LABORATORY REPORT

Prepared For: Geomatrix-Corona
250 East Rincon Street, Suite 204
Corona, CA 92879
Attention: Rick Rees

Project: Aerojet Azusa
007190.004

Sampled: 03/01/06
Received: 03/01/06
Issued: 03/06/06 12:59

NELAP #01108CA California ELAP#1197 CSDLAC #10117

The results listed within this Laboratory Report pertain only to the samples tested in the laboratory. The analyses contained in this report were performed in accordance with the applicable certifications as noted. All soil samples are reported on a wet weight basis unless otherwise noted in the report. This Laboratory Report is confidential and is intended for the sole use of Del Mar Analytical and its client. This report shall not be reproduced, except in full, without written permission from Del Mar Analytical. The Chain of Custody, 1 page, is included and is an integral part of this report.
This entire report was reviewed and approved for release

CASE NARRATIVE

SAMPLE RECEIPT: Samples were received intact, at 3°C, on ice and with chain of custody documentation.

HOLDING TIMES: All samples were analyzed within prescribed holding times and/or in accordance with the Del Mar Analytical Sample Acceptance Policy unless otherwise noted in the report.

PRESERVATION: Samples requiring preservation were verified prior to sample analysis.

QA/QC CRITERIA: All analyses met method criteria, except as noted in the report with data qualifiers.

COMMENTS: No significant observations were made.

SUBCONTRACTED: No analyses were subcontracted to an outside laboratory.

LABORATORY ID	CLIENT ID	MATRIX
IPC0162-01	PIZB-04A-60	Soil
IPC0162-02	PIZB-04A-70	Soil
IPC0162-03	PIZB-04A-80	Soil
IPC0162-04	PIZB-04A-90	Soil
IPC0162-05	PIZB-04A-100	Soil
IPC0162-06	PIZB-03-35	Soil
IPC0162-07	PIZB-03-40	Soil
IPC0162-08	PIZB-03-45	Soil
IPC0162-09	PIZB-03-50	Soil
IPC0162-10	PIZB-03-60	Soil

Reviewed By:

Del Mar Analytical, Irvine
Patty Mata
Project Manager



Del Mar Analytical

17461 Denian Ave., Suite 100, Irvine, CA 92614 (949) 261-1022 FAX (949) 260-3297
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2520 E Sunset Rd. #3, Las Vegas, NV 89120 (702) 798-3620 FAX (702) 798-3621

Geomatrix-Corona
250 East Rincon Street, Suite 204
Corona, CA 92879
Attention: Rick Rees

Project ID: Aerojet Azusa
007190.004
Report Number: IPC0162

Sampled: 03/01/06
Received: 03/01/06

INORGANICS

Analyte	Method	Batch	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IPC0162-01 (PIZB-04A-60 - Soil)				Sampled: 03/01/06				
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	6C02116	0.040	0.12	0.998	3/2/2006	3/3/2006	
Sample ID: IPC0162-02 (PIZB-04A-70 - Soil)				Sampled: 03/01/06				
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	6C02116	0.040	0.11	1	3/2/2006	3/3/2006	
Sample ID: IPC0162-03 (PIZB-04A-80 - Soil)				Sampled: 03/01/06				
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	6C02116	0.040	0.10	0.995	3/2/2006	3/4/2006	
Sample ID: IPC0162-04 (PIZB-04A-90 - Soil)				Sampled: 03/01/06				
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	6C02116	0.040	0.058	1	3/2/2006	3/4/2006	
Sample ID: IPC0162-05 (PIZB-04A-100 - Soil)				Sampled: 03/01/06				
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	6C02116	0.040	ND	1	3/2/2006	3/4/2006	
Sample ID: IPC0162-06 (PIZB-03-35 - Soil)				Sampled: 03/01/06				
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	6C02116	0.040	0.14	0.998	3/2/2006	3/4/2006	
Sample ID: IPC0162-07 (PIZB-03-40 - Soil)				Sampled: 03/01/06				
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	6C02116	0.040	ND	0.998	3/2/2006	3/4/2006	
Sample ID: IPC0162-08 (PIZB-03-45 - Soil)				Sampled: 03/01/06				
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	6C02116	0.040	0.098	0.998	3/2/2006	3/4/2006	
Sample ID: IPC0162-09 (PIZB-03-50 - Soil)				Sampled: 03/01/06				
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	6C02116	0.040	0.098	0.998	3/2/2006	3/4/2006	
Sample ID: IPC0162-10 (PIZB-03-60 - Soil)				Sampled: 03/01/06				
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	6C02116	0.040	0.079	0.995	3/2/2006	3/4/2006	

Del Mar Analytical, Irvine
Patty Mata
Project Manager

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IPC0162 <Page 2 of 5>



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2520 E Sunset Rd #3, Las Vegas, NV 89120 (702) 798-3620 FAX (702) 798-3621

Geomatrix-Corona
250 East Rincon Street, Suite 204
Corona, CA 92879
Attention: Rick Rees

Project ID: Aerojet Azusa
007190.004
Report Number: IPC0162

Sampled: 03/01/06
Received: 03/01/06

METHOD BLANK/QC DATA

INORGANICS

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC %REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 6C02116 Extracted: 03/02/06									
Blank Analyzed: 03/03/2006 (6C02116-BLK1)									
Perchlorate	ND	0.040	mg/kg						
LCS Analyzed: 03/03/2006 (6C02116-BS1)									
Perchlorate	0.534	0.040	mg/kg	0.500		107 85-115			
Matrix Spike Analyzed: 03/03/2006 (6C02116-MS1)									
Perchlorate	0.710	0.040	mg/kg	0.500	0.12	118 80-120			
Matrix Spike Dup Analyzed: 03/03/2006 (6C02116-MSD1)									
Perchlorate	0.649	0.040	mg/kg	0.499	0.12	106 80-120	9	20	

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Patty Mata
Project Manager

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IPC0162 <Page 3 of 5>



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2520 E Sunset Rd. #3, Las Vegas, NV 89120 (702) 798-3620 FAX (702) 798-3621

Geomatrix-Corona
250 East Rincon Street, Suite 204
Corona, CA 92879
Attention: Rick Rees

Project ID: Aerojet Azusa
007190.004
Report Number: IPC0162

Sampled: 03/01/06
Received: 03/01/06

DATA QUALIFIERS AND DEFINITIONS

ND Analyte NOT DETECTED at or above the reporting limit or MDL, if MDL is specified.
RPD Relative Percent Difference

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Patty Mata
Project Manager

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Project ID: Aerojet Azusa
007190.004
Report Number: IPC0162

Sampled: 03/01/06
Received: 03/01/06

Certification Summary

Del Mar Analytical, Irvine

Method	Matrix	Nelac	California
EPA 314.0 MOD.	Soil	N/A	N/A


Nevada and NELAP provide analyte specific accreditations. Analyte specific information for Del Mar Analytical may be obtained by contacting the laboratory or visiting our website at www.testamericainc.com

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IPC0162 <Page 5 of 5>

COR 10130

PROJECT NAME: AERJET - AISA		PERKIN ELMER AOC		DATE: 3-1-06		PAGE 1 OF 1						
PROJECT NUMBER 7190.004		LABORATORY NAME DEL MAR ANALYTICAL		CLIENT INFORMATION AERJET-AISA		REPORTING REQUIREMENTS						
RESULTS TO Rick Rees		LABORATORY ADDRESS 17461 DELBOW ST.										
TURNAROUND TIME SEE COMMENTS		IRVINE, CA 92614										
SAMPLE SHIPMENT METHOD COURIER		LABORATORY CONTACT PATTI MOON		GEOTRACKER REQUIRED YES		(NO)						
		LABORATORY PHONE NUMBER 949-261-1022		SITE SPECIFIC GLOBAL ID NO								
SAMPLERS (SIGNATURE): P.J. Jeffers		ANALYSES										
DATE	TIME	SAMPLE NUMBER	EPA 314		CONTAINER TYPE AND SIZE	Soil (S), Water (W), Vapor (V), or Other (O)	Filtered	Preservative Type	Cooled	MS/MSD	No. of Containers	ADDITIONAL COMMENTS
3-1-06	09:03	P12B-04A-60	X		4 oz Glass Jar	S			X		1	3 DAY TAT
3-1-06	09:30	P12B-04A-70	X		" "	S			X		1	3 DAY TAT
3-1-06	10:08	P12B-04A-80	X		" "	S			X		1	3 DAY TAT
3-1-06	10:36	P12B-04A-90	X		" "	S			X		1	3 DAY TAT
3-1-06	11:05	P12B-04A-100	X		" "	S			X		1	3 DAY TAT
3-1-06	14:50	P12B-03-35	X		" "	S			X		1	NORMAL TAT
3-1-06	14:57	P12B-03-40	X		" "	S			X		1	NORMAL TAT
3-1-06	15:05	P12B-03-45	X		" "	S			X		1	NORMAL TAT
3-1-06	15:11	P12B-03-50	X		" "	S			X		1	NORMAL TAT
3-1-06	15:28	P12B-03-60	X		" "	S			X		1	3 DAY TAT
RELINQUISHED BY:		DATE	TIME	RECEIVED BY:		DATE	TIME	TOTAL NUMBER OF CONTAINERS:		10		
SIGNATURE: P.J. Jeffers		3-1-2006	15:35	SIGNATURE: Jon Power		3/1/06	15:25	SAMPLING COMMENTS:				
PRINTED NAME: PAUL JEFFERS				PRINTED NAME: Jon Power								
COMPANY: GEOMATRIX				COMPANY: D.M.A.I.								
SIGNATURE: Jon Power		3/1/06	17:05	SIGNATURE: Armando Ferrera		3/1/06	17:05	@ 3 L				
PRINTED NAME: Jon Power				PRINTED NAME: Armando Ferrera								
COMPANY: D.M.A.I.				COMPANY: Del Mar								
SIGNATURE:				SIGNATURE:				250 East Rincon Street, Suite 204 Corona, California 92879-1363 Tel 951.273.7400 Fax 951.273.7420				
PRINTED NAME:				PRINTED NAME:				 Geomatrix				
COMPANY:				COMPANY:								



LABORATORY REPORT

Prepared For: Geomatrix-Corona
250 East Rincon Street, Suite 204
Corona, CA 92879
Attention: Rick Rees

Project: Aerojet Azusa
007190.004.1.7

Sampled: 03/02/06
Received: 03/02/06
Issued: 03/17/06 13:40

NELAP #01108CA California ELAP#1197 CSDLAC #10117

The results listed within this Laboratory Report pertain only to the samples tested in the laboratory. The analyses contained in this report were performed in accordance with the applicable certifications as noted. All soil samples are reported on a wet weight basis unless otherwise noted in the report. This Laboratory Report is confidential and is intended for the sole use of Del Mar Analytical and its client. This report shall not be reproduced, except in full, without written permission from Del Mar Analytical. The Chain(s) of Custody, 2 pages, are included and are an integral part of this report. This entire report was reviewed and approved for release.

CASE NARRATIVE

SAMPLE RECEIPT: Samples were received intact, at 4°C, on ice and with chain of custody documentation.

HOLDING TIMES: All samples were analyzed within prescribed holding times and/or in accordance with the Del Mar Analytical Sample Acceptance Policy unless otherwise noted in the report.

PRESERVATION: Samples requiring preservation were verified prior to sample analysis.

QA/QC CRITERIA: All analyses met method criteria, except as noted in the report with data qualifiers.

COMMENTS: Only the standard TAT perchlorate sample results are included in this report. All other results were sent under separate cover.

SUBCONTRACTED: No analyses were subcontracted to an outside laboratory.

LABORATORY ID	CLIENT ID	MATRIX
IPC0311-05	PSZB-52-1	Soil
IPC0311-06	PSZB-52-2.5	Soil
IPC0311-07	PSZB-52-5	Soil
IPC0311-08	PSZB-52-7.5	Soil
IPC0311-09	PSZB-52-10	Soil
IPC0311-10	PSZB-52-15	Soil
IPC0311-11	PSZB-52-20	Soil
IPC0311-12	PSZB-52-25	Soil
IPC0311-13	PSZB-52-30	Soil
IPC0311-14	PSZB-52-35	Soil

Del Mar Analytical - Irvine
Patty Mata
Project Manager



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2520 E Sunset Rd. #3, Las Vegas, NV 89120 (702) 798-3620 FAX (702) 798-3621

Geomatrix-Corona
250 East Rincon Street, Suite 204
Corona, CA 92879
Attention: Rick Rees

Project ID: Aerojet Azusa
007190.004.1 7
Report Number: IPC0311

Sampled: 03/02/06
Received: 03/02/06

LABORATORY ID	CLIENT ID	MATRIX
IPC0311-15	PSZB-52-40	Soil
IPC0311-16	PSZB-48-1	Soil
IPC0311-17	PSZB-48-2.5	Soil
IPC0311-18	PSZB-48-5	Soil
IPC0311-19	PSZB-48-7.5	Soil
IPC0311-20	PSZB-48-10	Soil
IPC0311-21	PSZB-48-15	Soil
IPC0311-22	PSZB-48-20	Soil
IPC0311-23	PSZB-48-25	Soil
IPC0311-24	PSZB-48-30	Soil
IPC0311-25	PSZB-48-35	Soil
IPC0311-26	PSZB-48-40	Soil

Reviewed By:

Del Mar Analytical - Irvine
Patty Mata
Project Manager

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Geomatrix-Corona
250 East Rincon Street, Suite 204
Corona, CA 92879
Attention: Rick Rees

Project ID: Aerojet Azusa
007190.004.1.7
Report Number: IPC0311

Sampled: 03/02/06
Received: 03/02/06

INORGANICS

Analyte	Method	Batch	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IPC0311-05 (PSZB-52-1 - Soil)				Sampled: 03/02/06				
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	6C03128	0.040	0.67	0.998	3/3/2006	3/4/2006	
Sample ID: IPC0311-06 (PSZB-52-2.5 - Soil)				Sampled: 03/02/06				
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	6C03128	4.0	15	100	3/3/2006	3/6/2006	
Sample ID: IPC0311-07 (PSZB-52-5 - Soil)				Sampled: 03/02/06				
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	6C03128	0.20	1.1	4.98	3/3/2006	3/8/2006	
Sample ID: IPC0311-08 (PSZB-52-7.5 - Soil)				Sampled: 03/02/06				
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	6C03128	0.040	0.14	0.995	3/3/2006	3/4/2006	
Sample ID: IPC0311-09 (PSZB-52-10 - Soil)				Sampled: 03/02/06				
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	6C03128	0.040	0.13	0.993	3/3/2006	3/6/2006	
Sample ID: IPC0311-10 (PSZB-52-15 - Soil)				Sampled: 03/02/06				
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	6C03128	0.040	0.16	0.998	3/3/2006	3/5/2006	
Sample ID: IPC0311-11 (PSZB-52-20 - Soil)				Sampled: 03/02/06				
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	6C03128	0.040	0.14	0.995	3/3/2006	3/5/2006	
Sample ID: IPC0311-12 (PSZB-52-25 - Soil)				Sampled: 03/02/06				
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	6C03128	0.040	0.23	0.995	3/3/2006	3/5/2006	
Sample ID: IPC0311-13 (PSZB-52-30 - Soil)				Sampled: 03/02/06				
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	6C03129	0.040	0.46	0.998	3/3/2006	3/4/2006	
Sample ID: IPC0311-14 (PSZB-52-35 - Soil)				Sampled: 03/02/06				
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	6C03129	0.040	0.071	0.998	3/3/2006	3/4/2006	

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Geomatrix-Corona
 250 East Rincon Street, Suite 204
 Corona, CA 92879
 Attention: Rick Rees

Project ID: Aerojet Azusa
 007190.004.1.7
 Report Number: IPC0311

Sampled: 03/02/06
 Received: 03/02/06

INORGANICS

Analyte	Method	Batch	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IPC0311-15 (PSZB-52-40 - Soil)				Sampled: 03/02/06				
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	6C03129	0.040	0.12	0.995	3/3/2006	3/4/2006	
Sample ID: IPC0311-16 (PSZB-48-1 - Soil)				Sampled: 03/02/06				
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	6C03129	0.040	ND	0.998	3/3/2006	3/4/2006	
Sample ID: IPC0311-17 (PSZB-48-2.5 - Soil)				Sampled: 03/02/06				
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	6C03129	0.040	ND	0.995	3/3/2006	3/4/2006	
Sample ID: IPC0311-18 (PSZB-48-5 - Soil)				Sampled: 03/02/06				
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	6C03129	0.040	ND	0.998	3/3/2006	3/4/2006	
Sample ID: IPC0311-19 (PSZB-48-7.5 - Soil)				Sampled: 03/02/06				
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	6C03129	0.040	ND	0.995	3/3/2006	3/4/2006	
Sample ID: IPC0311-20 (PSZB-48-10 - Soil)				Sampled: 03/02/06				
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	6C03129	0.040	ND	0.995	3/3/2006	3/4/2006	
Sample ID: IPC0311-21 (PSZB-48-15 - Soil)				Sampled: 03/02/06				
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	6C03129	0.040	ND	0.995	3/3/2006	3/4/2006	
Sample ID: IPC0311-22 (PSZB-48-20 - Soil)				Sampled: 03/02/06				
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	6C03129	0.040	ND	0.995	3/3/2006	3/4/2006	
Sample ID: IPC0311-23 (PSZB-48-25 - Soil)				Sampled: 03/02/06				
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	6C03129	0.040	0.093	0.998	3/3/2006	3/4/2006	
Sample ID: IPC0311-24 (PSZB-48-30 - Soil)				Sampled: 03/02/06				
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	6C03129	0.040	0.041	0.998	3/3/2006	3/4/2006	

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 Project Manager

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Geomatrix-Corona
250 East Rincon Street, Suite 204
Corona, CA 92879
Attention: Rick Rees

Project ID: Aerojet Azusa
007190.004.1.7
Report Number: IPC0311

Sampled: 03/02/06
Received: 03/02/06

INORGANICS

Analyte	Method	Batch	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IPC0311-25 (PSZB-48-35 - Soil)				Sampled: 03/02/06				
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	6C03129	0.040	ND	0.998	3/3/2006	3/4/2006	
Sample ID: IPC0311-26 (PSZB-48-40 - Soil)				Sampled: 03/02/06				
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	6C03129	0.040	ND	0.995	3/3/2006	3/4/2006	

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Geomatrix-Corona
250 East Rincon Street, Suite 204
Corona, CA 92879
Attention: Rick Rees

Project ID: Aerojet Azusa
007190.004.1.7
Report Number: IPC0311

Sampled: 03/02/06
Received: 03/02/06

METHOD BLANK/QC DATA

INORGANICS

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC %REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 6C03128 Extracted: 03/03/06									
Blank Analyzed: 03/04/2006 (6C03128-BLK1)									
Perchlorate	ND	0.040	mg/kg						
LCS Analyzed: 03/04/2006 (6C03128-BS1)									
Perchlorate	0.514	0.040	mg/kg	0.500		103 85-115			
Matrix Spike Analyzed: 03/04/2006 (6C03128-MS1)									
Perchlorate	0.572	0.040	mg/kg	0.499	0.064	102 80-120			
Matrix Spike Dup Analyzed: 03/04/2006 (6C03128-MSD1)									
Perchlorate	0.574	0.040	mg/kg	0.499	0.064	102 80-120	0	20	
Batch: 6C03129 Extracted: 03/03/06									
Blank Analyzed: 03/04/2006 (6C03129-BLK1)									
Perchlorate	ND	0.040	mg/kg						
LCS Analyzed: 03/04/2006 (6C03129-BS1)									
Perchlorate	0.495	0.040	mg/kg	0.500		99 85-115			
Matrix Spike Analyzed: 03/04/2006 (6C03129-MS1)									
Perchlorate	0.885	0.040	mg/kg	0.499	0.46	85 80-120			
Matrix Spike Dup Analyzed: 03/04/2006 (6C03129-MSD1)									
Perchlorate	0.973	0.040	mg/kg	0.499	0.46	103 80-120	9	20	

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Project Manager

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Geomatrix-Corona
250 East Rincon Street, Suite 204
Corona, CA 92879
Attention: Rick Rees

Project ID: Aerojet Azusa
007190.004.1.7
Report Number: IPC0311

Sampled: 03/02/06
Received: 03/02/06

DATA QUALIFIERS AND DEFINITIONS

ND Analyte NOT DETECTED at or above the reporting limit or MDL, if MDL is specified
RPD Relative Percent Difference

Del Mar Analytical - Irvine
Patty Mata
Project Manager

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Geomatrix-Corona
250 East Rincon Street, Suite 204
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Attention: Rick Rees

Project ID. Aerojet Azusa
007190.004.1.7
Report Number. IPC0311

Sampled: 03/02/06
Received: 03/02/06

Certification Summary

Del Mar Analytical - Irvine

Method	Matrix	Nelac	California
EPA 314.0 MOD.	Soil	N/A	N/A

Nevada and NELAP provide analyte specific accreditations. Analyte specific information for Del Mar Analytical may be obtained by contacting the laboratory or visiting our website at www.testamericainc.com

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IPC0311 <Page 8 of 8>


CHAIN-OF-CUSTODY RECORD

TQC-0311

COR 10131

PROJECT NAME: AEROJET - AISA PERKIL ELMER AOC				DATE: 3-1-06/3-2-06		PAGE 1 OF 2	
PROJECT NUMBER: 7190.004		LABORATORY NAME: DEL MAR ANALYTICAL		CLIENT INFORMATION: AEROJET - AISA		REPORTING REQUIREMENTS	
RESULTS TO: Rick Rees		LABORATORY ADDRESS: 17461 DELMAR ST.					
TURNAROUND TIME: SEE COMMENTS		IRVING, CA 92614					
SAMPLE SHIPMENT METHOD: COURIER		LABORATORY CONTACT: PATTI MATA		GEOTRACKER REQUIRED: YES		(NO)	
		LABORATORY PHONE NUMBER: 949-261-1022				SITE SPECIFIC GLOBAL ID NO	

SAMPLERS (SIGNATURE):			ANALYSES										CONTAINER TYPE AND SIZE		Soil (S), Water (W), Vapor (V), or Other (O)	Filtered	Preservative Type	Cooled	MS/MSD	No of Containers	ADDITIONAL COMMENTS
DATE	TIME	SAMPLE NUMBER	EPA 314																		
3-1-06	15:44	P12B-03-70	X												40Z. GLASS JAR	S			X	1	3 DAY TAT
3-1-06	16:01	P12B-03-80	X												" "	S			X	1	3 DAY TAT
3-1-06	16:20	P12B-03-90	X												" "	S			X	1	3 DAY TAT
3-1-06	16:41	P12B-03-100	X												" "	S			X	1	3 DAY TAT
3-2-06	11:06	P52B-52-1	X												" "	S			X	1	NORMAL TAT
3-2-06	11:10	P52B-52-2.5	X												" "	S			X	1	NORMAL TAT
3-2-06	11:13	P52B-52-5	X												" "	S			X	1	NORMAL TAT
3-2-06	11:16	P52B-52-7.5	X												" "	S			X	1	NORMAL TAT
3-2-06	11:21	P52B-52-10	X												" "	S			X	1	NORMAL TAT
3-2-06	11:27	P52B-52-15	X												" "	S			X	1	NORMAL TAT
3-2-06	11:33	P52B-52-20	X												" "	S			X	1	NORMAL TAT
3-2-06	11:38	P52B-52-25	X												" "	S			X	1	NORMAL TAT
3-2-06	11:45	P52B-52-30	X												" "	S			X	1	NORMAL TAT
3-2-06	11:52	P52B-52-35	X												" "	S			X	1	NORMAL TAT
3-2-06	11:58	P52B-52-40	X												" "	S			X	1	NORMAL TAT

RELINQUISHED BY:		DATE	TIME	RECEIVED BY:		DATE	TIME	TOTAL NUMBER OF CONTAINERS:		15
SIGNATURE: Ana Gonzalez		3/2/06	1658	SIGNATURE: Jon Power		3/2/06	1658	SAMPLING COMMENTS		
PRINTED NAME: Ana Gonzalez				PRINTED NAME: Jon Power						
COMPANY: Geomatrix Consultants				COMPANY: DMAT						
SIGNATURE: Jon Power		3/2/06	1810	SIGNATURE: Armando Herrera		3/2/06	18:10	SAMPLING COMMENTS		② 4 ^c
PRINTED NAME: Jon Power				PRINTED NAME: Armando Herrera						
COMPANY: DMAT				COMPANY: Del Mar						
SIGNATURE:				SIGNATURE:				250 East Rincon Street, Suite 204		 Geomatrix
PRINTED NAME:				PRINTED NAME:				Corona, California 92879-1363		
COMPANY:				COMPANY:				Tel 951.273.7400 Fax 951.273.7420		

CHAIN-OF-CUSTODY RECORD

COR 10132

PROJECT NAME: AGROJET - AISA Peak, Elmer No.				DATE: 3-2-06		PAGE: 2 OF 2					
PROJECT NUMBER: 7190-004		LABORATORY NAME: DEL MAR ANALYTICAL		CLIENT INFORMATION: AGROJET - AISA		REPORTING REQUIREMENTS					
RESULTS TO: Rick REES		LABORATORY ADDRESS: 17461 DENNIS ST									
TURNAROUND TIME: SEE COMMENTS		LABORATORY CONTACT: Irving, CA 92614									
SAMPLE SHIPMENT METHOD: Courier		LABORATORY PHONE NUMBER: 949-261-1022		GEOTRACKER REQUIRED: YES		10					
SAMPLERS (SIGNATURE): Pat JRE Ana Gonzalez		ANALYSES		SITE SPECIFIC GLOBAL ID NO							
DATE	TIME	SAMPLE NUMBER	EPA 314	CONTAINER TYPE AND SIZE	Soil (S), Water (W), Vapor (V), or Other (O)	Filtered	Preservative Type	Cooled	MS/MSD	No. of Containers	ADDITIONAL COMMENTS
3-2-06	13:26	PS2B-48-1	X	4 oz Glass Jar	S			X		1	NORMAL TAT
3-2-06	13:27	PS2B-48-2.5	X	" "	S			X		1	NORMAL TAT
3-2-06	13:29	PS2B-48-5	X	" "	S			X		1	NORMAL TAT
3-2-06	13:31	PS2B-48-7.5	X	" "	S			X		1	NORMAL TAT
3-2-06	13:34	PS2B-48-10	X	" "	S			X		1	NORMAL TAT
3-2-06	13:43	PS2B-48-15	X	" "	S			X		1	NORMAL TAT
3-2-06	13:50	PS2B-48-20	X	" "	S			X		1	NORMAL TAT
3-2-06	14:10	PS2B-48-25	X	" "	S			X		1	NORMAL TAT
3-2-06	14:14	PS2B-48-30	X	" "	S			X		1	NORMAL TAT
3-2-06	14:25	PS2B-48-35	X	" "	S			X		1	NORMAL TAT
3-2-06	14:30	PS2B-48-40	X	" "	S			X		1	NORMAL TAT
PC 3/2/06											
RELINQUISHED BY:		DATE	TIME	RECEIVED BY:		DATE	TIME	TOTAL NUMBER OF CONTAINERS:		11	
SIGNATURE: Ana Gonzalez		3/2/06	1658	SIGNATURE: Jon Power		3/2/06	1658	SAMPLING COMMENTS:			
PRINTED NAME: Ana Gonzalez				PRINTED NAME: Jon Power							
COMPANY: Geomatrix Consultants				COMPANY: DMAI							
SIGNATURE: Jon Power		3/2/06	1810	SIGNATURE: Luis Hernandez		3/2/06	1810	@ 4°C			
PRINTED NAME: Jon Power				PRINTED NAME: Luis Hernandez							
COMPANY: DMAI				COMPANY: Del Mar							
SIGNATURE:				SIGNATURE:				250 East Rincon Street, Suite 204			
PRINTED NAME:				PRINTED NAME:				Corona, California 92879-1363			
COMPANY:				COMPANY:				Tel 951.273.7400 Fax 951.273.7420			



Geomatrix



LABORATORY REPORT

Prepared For: Geomatrix-Corona
250 East Rincon Street, Suite 204
Corona, CA 92879
Attention: Rick Rees

Project: Aerojet Azusa
7190.004.0

Sampled: 03/03/06
Received: 03/03/06
Issued: 03/17/06 10:40

NELAP #01108CA California ELAP#1197 CSDLAC #10117

*The results listed within this Laboratory Report pertain only to the samples tested in the laboratory. The analyses contained in this report were performed in accordance with the applicable certifications as noted. All soil samples are reported on a wet weight basis unless otherwise noted in the report. This Laboratory Report is confidential and is intended for the sole use of Del Mar Analytical and its client. This report shall not be reproduced, except in full, without written permission from Del Mar Analytical. The Chain of Custody, 1 page, is included and is an integral part of this report.
This entire report was reviewed and approved for release.*

CASE NARRATIVE

SAMPLE RECEIPT: Samples were received intact, at 4°C, on ice and with chain of custody documentation.

HOLDING TIMES: All samples were analyzed within prescribed holding times and/or in accordance with the Del Mar Analytical Sample Acceptance Policy unless otherwise noted in the report.

PRESERVATION: Samples requiring preservation were verified prior to sample analysis.

QA/QC CRITERIA: All analyses met method criteria, except as noted in the report with data qualifiers.

COMMENTS: No significant observations were made.

SUBCONTRACTED: No analyses were subcontracted to an outside laboratory.

LABORATORY ID	CLIENT ID	MATRIX
IPC0512-01	PSZB-70-1	Soil
IPC0512-02	PSZB-70-2.5	Soil
IPC0512-03	PSZB-70-5.0	Soil
IPC0512-04	PSZB-70-7.5	Soil
IPC0512-05	PSZB-70-10	Soil
IPC0512-06	PSZB-70-15	Soil
IPC0512-07	PSZB-70-20	Soil
IPC0512-08	PSZB-70-25	Soil
IPC0512-09	PSZB-70-30	Soil
IPC0512-10	PSZB-70-35	Soil
IPC0512-11	PSZB-70-40	Soil

Reviewed By:

Del Mar Analytical - Irvine
Patty Mata
Project Manager



Del Mar Analytical

17461 Denan Ave., Suite 100, Irvine, CA 92614 (949) 261-1022 FAX (949) 260-3297
 1014 E. Cooley Dr., Suite A, Colton, CA 92324 (909) 370-4667 FAX (909) 370-1046
 9830 South 51st St., Suite B-120, Phoenix, AZ 85044 (480) 785-0043 FAX (480) 785-0851
 2520 E. Sunset Rd. #3, Las Vegas, NV 89120 (702) 798-3620 FAX (702) 798-3621

Geomatrix-Corona
 250 East Rincon Street, Suite 204
 Corona, CA 92879
 Attention: Rick Rees

Project ID: Aerojet Azusa
 7190.004.0
 Report Number: IPC0512

Sampled: 03/03/06
 Received: 03/03/06

INORGANICS

Analyte	Method	Batch	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IPC0512-01 (PSZB-70-1 - Soil)				Sampled: 03/03/06				
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	6C06111	0.040	ND	0.998	3/6/2006	3/7/2006	
Sample ID: IPC0512-02 (PSZB-70-2.5 - Soil)				Sampled: 03/03/06				
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	6C06111	0.040	ND	0.995	3/6/2006	3/7/2006	
Sample ID: IPC0512-03 (PSZB-70-5.0 - Soil)				Sampled: 03/03/06				
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	6C06111	0.040	ND	0.995	3/6/2006	3/7/2006	
Sample ID: IPC0512-04 (PSZB-70-7.5 - Soil)				Sampled: 03/03/06				
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	6C06111	0.040	ND	0.998	3/6/2006	3/7/2006	
Sample ID: IPC0512-05 (PSZB-70-10 - Soil)				Sampled: 03/03/06				
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	6C06111	0.040	ND	0.998	3/6/2006	3/7/2006	
Sample ID: IPC0512-06 (PSZB-70-15 - Soil)				Sampled: 03/03/06				
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	6C06111	0.040	ND	0.998	3/6/2006	3/7/2006	
Sample ID: IPC0512-07 (PSZB-70-20 - Soil)				Sampled: 03/03/06				
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	6C06111	0.040	ND	0.995	3/6/2006	3/7/2006	
Sample ID: IPC0512-08 (PSZB-70-25 - Soil)				Sampled: 03/03/06				
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	6C06111	0.040	ND	0.995	3/6/2006	3/7/2006	
Sample ID: IPC0512-09 (PSZB-70-30 - Soil)				Sampled: 03/03/06				
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	6C06111	0.040	ND	0.998	3/6/2006	3/7/2006	
Sample ID: IPC0512-10 (PSZB-70-35 - Soil)				Sampled: 03/03/06				
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	6C06111	0.040	ND	0.995	3/6/2006	3/7/2006	

Del Mar Analytical - Irvine
 Patty Mata
 Project Manager

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Geomatrix-Corona
250 East Rincon Street, Suite 204
Corona, CA 92879
Attention: Rick Rees

Project ID: Aerojet Azusa
7190.004.0
Report Number: IPC0512

Sampled: 03/03/06
Received: 03/03/06

INORGANICS

Analyte	Method	Batch	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IPC0512-11 (PSZB-70-40 - Soil)				Sampled: 03/03/06				
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	6C06111	0.040	ND	0.998	3/6/2006	3/7/2006	

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Geomatrix-Corona
250 East Rincon Street, Suite 204
Corona, CA 92879
Attention: Rick Rees

Project ID: Aerojet Azusa
7190.004.0
Report Number: IPC0512

Sampled: 03/03/06
Received: 03/03/06

METHOD BLANK/QC DATA

INORGANICS

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 6C06111 Extracted: 03/06/06									
Blank Analyzed: 03/07/2006 (6C06111-BLK1)									
Perchlorate	ND	0.040	mg/kg						
LCS Analyzed: 03/07/2006 (6C06111-BS1)									
Perchlorate	0.532	0.040	mg/kg	0.500		106 85-115			
Matrix Spike Analyzed: 03/07/2006 (6C06111-MS1)									
Perchlorate	0.573	0.040	mg/kg	0.499	0.069	101 80-120			
Matrix Spike Dup Analyzed: 03/07/2006 (6C06111-MSD1)									
Perchlorate	0.679	0.040	mg/kg	0.499	0.069	122 80-120	17	20	MI

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Geomatrix-Corona
250 East Rincon Street, Suite 204
Corona, CA 92879
Attention: Rick Rees

Project ID: Aerojet Azusa
7190 004.0
Report Number: IPC0512

Sampled: 03/03/06
Received: 03/03/06

DATA QUALIFIERS AND DEFINITIONS

M1 The MS and/or MSD were above the acceptance limits due to sample matrix interference. See Blank Spike (LCS).
ND Analyte NOT DETECTED at or above the reporting limit or MDL, if MDL is specified.
RPD Relative Percent Difference

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Geomatrix-Corona
250 East Rincon Street, Suite 204
Corona, CA 92879
Attention: Rick Rees

Project ID: Aerojet Azusa
7190.004.0
Report Number: IPC0512

Sampled: 03/03/06
Received: 03/03/06

Certification Summary

Del Mar Analytical - Irvine

Method	Matrix	Nelac	California
EPA 314.0 MOD.	Soil	N/A	N/A

Nevada and NELAP provide analyte specific accreditations. Analyte specific information for Del Mar Analytical may be obtained by contacting the laboratory or visiting our website at www.testamericainc.com

Del Mar Analytical - Irvine
Patty Mata
Project Manager

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IPC0512 <Page 6 of 6>

024

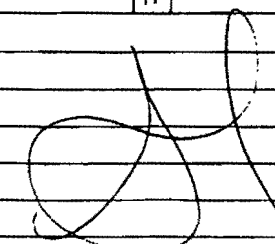
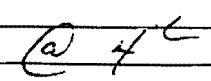
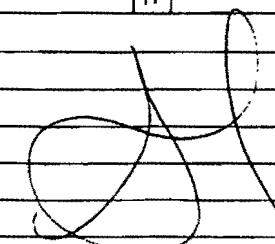
CHAIN-OF-CUSTODY RECORD

IPC0512


COR 10133

PROJECT NAME: <u>Del Mar AISA Park/Fiber Acc</u>			DATE: <u>3/3/06</u>			PAGE <u>1</u> OF <u>1</u>		
PROJECT NUMBER: <u>7190-301</u>			LABORATORY NAME: <u>Del Mar Analytical</u>			CLIENT INFORMATION: <u>AISA</u>		
RESULTS TO: <u>Pick Ups</u>			LABORATORY ADDRESS: <u>17461 Duran St</u>			REPORTING REQUIREMENTS:		
TURNAROUND TIME: <u>See comments</u>			LABORATORY CONTACT: <u>Pat Mota</u>			GEOTRACKER REQUIRED: YES <input checked="" type="checkbox"/> NO <input type="checkbox"/>		
SAMPLE SHIPMENT METHOD: <u>courier</u>			LABORATORY PHONE NUMBER: <u>949-261-1022</u>			SITE SPECIFIC GLOBAL ID NO:		

SAMPLERS (SIGNATURE): <u>Ann Chongaly</u>			ANALYSES										CONTAINER TYPE AND SIZE		Soil (S), Water (W), Vapor (V), or Other (O)	Filtered	Preservative Type	Cooled	MS/MSD	No. of Containers	ADDITIONAL COMMENTS
DATE	TIME	SAMPLE NUMBER	EDA 314																		
3/3/06	920	PS2B-70-1	X											4.02 brass jar	S			X		1	Normal TAT
3/3/06	922	PS2B-70-2.5	X											" "	S			X		1	Normal TAT
3/3/06	924	PS2B-70-5.0	X											" "	S			X		1	Normal TAT
3/3/06	926	PS2B-70-7.5	X											" "	S			X		1	Normal TAT
3/3/06	928	PS2B-70-10	X											" "	S			X		1	Normal TAT
3/3/06	935	PS2B-70-15	X											" "	S			X		1	Normal TAT
3/3/06	940	PS2B-70-20	X											" "	S			X		1	Normal TAT
3/3/06	1000	PS2B-70-25	X											" "	S			X		1	Normal TAT
3/3/06	1005	PS2B-70-30	X											" "	S			X		1	Normal TAT
3/3/06	1013	PS2B-70-35	X											" "	S			X		1	Normal TAT
3/3/06	1020	PS2B-70-40	X											" "	S			X		1	Normal TAT

RELINQUISHED BY:		DATE	TIME	RECEIVED BY:		DATE	TIME	TOTAL NUMBER OF CONTAINERS:		11
SIGNATURE: <u>Ann Chongaly</u>		3/3/06	1552	SIGNATURE: <u>Jon Power</u>		3/3/06	1552	SAMPLING COMMENTS:		
PRINTED NAME: <u>Ann Chongaly</u>				PRINTED NAME: <u>Jon Power</u>						
COMPANY: <u>Geomatrix Consultants</u>		3/3/06	1900	SIGNATURE: <u>Armando Herrera</u>		3/3/06	19:00			
PRINTED NAME: <u>Jon Power</u>				PRINTED NAME: <u>Armando Herrera</u>						
COMPANY: <u>OMGE</u>				COMPANY: <u>Del Mar</u>						
SIGNATURE:				SIGNATURE:						
PRINTED NAME:				PRINTED NAME:						
COMPANY:				COMPANY:						

250 East Rincon Street, Suite 204
Corona, California 92879-1363
Tel 951.273.7400 Fax 951.273.7420



Geomatrix



LABORATORY REPORT

Prepared For: Geomatrix-Corona
250 East Rincon Street, Suite 204
Corona, CA 92879
Attention: Rick Rees

Project: Aerojet Azusa
007190.004

Sampled: 03/06/06
Received: 03/06/06
Issued: 03/20/06 10:40

NELAP #01108CA California ELAP#1197 CSDLAC #10117

The results listed within this Laboratory Report pertain only to the samples tested in the laboratory. The analyses contained in this report were performed in accordance with the applicable certifications as noted. All soil samples are reported on a wet weight basis unless otherwise noted in the report. This Laboratory Report is confidential and is intended for the sole use of Del Mar Analytical and its client. This report shall not be reproduced, except in full, without written permission from Del Mar Analytical. The Chain(s) of Custody, 2 pages, are included and are an integral part of this report. This entire report was reviewed and approved for release.

CASE NARRATIVE

SAMPLE RECEIPT: Samples were received intact, at 3°C, on ice and with chain of custody documentation.

HOLDING TIMES: All samples were analyzed within prescribed holding times and/or in accordance with the Del Mar Analytical Sample Acceptance Policy unless otherwise noted in the report.

PRESERVATION: Samples requiring preservation were verified prior to sample analysis.

QA/QC CRITERIA: All analyses met method criteria, except as noted in the report with data qualifiers.

COMMENTS: Only the standard TAT Perchlorate sample results are included in this report. All other results were sent under separate cover.

SUBCONTRACTED: No analyses were subcontracted to an outside laboratory.

LABORATORY ID	CLIENT ID	MATRIX
IPC0595-01	PSZB-68-7.5	Soil
IPC0595-02	PSZB-68-10	Soil
IPC0595-03	PSZB-68-15	Soil
IPC0595-04	PSZB-68-20	Soil
IPC0595-05	PSZB-68-25	Soil
IPC0595-06	PSZB-68-30	Soil
IPC0595-07	PSZB-68-35	Soil
IPC0595-08	PSZB-68-40	Soil
IPC0595-09	PSZB-71-1	Soil
IPC0595-10	PSZB-71-2.5	Soil

Del Mar Analytical - Irvine
Patty Mata
Project Manager



Del Mar Analytical

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Geomatrix-Corona
250 East Rincon Street, Suite 204
Corona, CA 92879
Attention: Rick Rees

Project ID: Aerojet Azusa
007190.004
Report Number: IPC0595

Sampled: 03/06/06
Received: 03/06/06

LABORATORY ID	CLIENT ID	MATRIX
IPC0595-11	PSZB-71-5	Soil
IPC0595-15	PSZB-69-7.5	Soil
IPC0595-16	PSZB-69-10	Soil
IPC0595-17	PSZB-69-15	Soil
IPC0595-18	PSZB-69-20	Soil
IPC0595-19	PSZB-69-25	Soil
IPC0595-20	PSZB-69-30	Soil
IPC0595-21	PSZB-69-35	Soil
IPC0595-22	PSZB-69-40	Soil
IPC0595-23	PSZB-73-1	Soil
IPC0595-24	PSZB-73-2.5	Soil
IPC0595-25	PSZB-73-5	Soil

Reviewed By:

Del Mar Analytical - Irvine
Patty Mata
Project Manager

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IPC0595 <Page 2 of 8>



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2520 E. Sunset Rd. #3, Las Vegas, NV 89120 (702) 798-3620 FAX (702) 798-3621

Geomatrix-Corona
250 East Rincon Street, Suite 204
Corona, CA 92879
Attention: Rick Rees

Project ID: Aerojet Azusa
007190.004
Report Number: IPC0595

Sampled: 03/06/06
Received: 03/06/06

INORGANICS

Analyte	Method	Batch	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IPC0595-01 (PSZB-68-7.5 - Soil)				Sampled: 03/06/06				
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	6C08093	0.040	ND	1	3/8/2006	3/8/2006	
Sample ID: IPC0595-02 (PSZB-68-10 - Soil)				Sampled: 03/06/06				
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	6C08093	0.040	ND	0.998	3/8/2006	3/8/2006	
Sample ID: IPC0595-03 (PSZB-68-15 - Soil)				Sampled: 03/06/06				
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	6C08093	0.040	ND	0.998	3/8/2006	3/8/2006	
Sample ID: IPC0595-04 (PSZB-68-20 - Soil)				Sampled: 03/06/06				
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	6C08093	0.040	ND	0.995	3/8/2006	3/8/2006	
Sample ID: IPC0595-05 (PSZB-68-25 - Soil)				Sampled: 03/06/06				
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	6C08093	0.040	ND	0.995	3/8/2006	3/8/2006	
Sample ID: IPC0595-06 (PSZB-68-30 - Soil)				Sampled: 03/06/06				
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	6C08093	0.040	ND	0.998	3/8/2006	3/8/2006	
Sample ID: IPC0595-07 (PSZB-68-35 - Soil)				Sampled: 03/06/06				
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	6C08093	0.040	ND	0.998	3/8/2006	3/8/2006	
Sample ID: IPC0595-08 (PSZB-68-40 - Soil)				Sampled: 03/06/06				
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	6C08093	0.040	ND	0.995	3/8/2006	3/8/2006	
Sample ID: IPC0595-09 (PSZB-71-1 - Soil)				Sampled: 03/06/06				
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	6C08093	0.040	ND	0.995	3/8/2006	3/8/2006	
Sample ID: IPC0595-10 (PSZB-71-2.5 - Soil)				Sampled: 03/06/06				
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	6C08093	0.040	ND	1	3/8/2006	3/8/2006	

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Patty Mata
Project Manager

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IPC0595 <Page 3 of 8>



Geomatrix-Corona
250 East Rincon Street, Suite 204
Corona, CA 92879
Attention: Rick Rees

Project ID: Aerojet Azusa
007190.004
Report Number: IPC0595

Sampled: 03/06/06
Received: 03/06/06

INORGANICS

Analyte	Method	Batch	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IPC0595-11 (PSZB-71-5 - Soil)				Sampled: 03/06/06				
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	6C08093	0.040	ND	0.995	3/8/2006	3/8/2006	
Sample ID: IPC0595-15 (PSZB-69-7.5 - Soil)				Sampled: 03/06/06				
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	6C08093	0.040	ND	0.998	3/8/2006	3/8/2006	
Sample ID: IPC0595-16 (PSZB-69-10 - Soil)				Sampled: 03/06/06				
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	6C08093	0.040	ND	0.998	3/8/2006	3/8/2006	
Sample ID: IPC0595-17 (PSZB-69-15 - Soil)				Sampled: 03/06/06				
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	6C08093	0.040	ND	1	3/8/2006	3/8/2006	
Sample ID: IPC0595-18 (PSZB-69-20 - Soil)				Sampled: 03/06/06				
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	6C08093	0.040	ND	0.998	3/8/2006	3/8/2006	
Sample ID: IPC0595-19 (PSZB-69-25 - Soil)				Sampled: 03/06/06				
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	6C08093	0.040	ND	0.995	3/8/2006	3/8/2006	
Sample ID: IPC0595-20 (PSZB-69-30 - Soil)				Sampled: 03/06/06				
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	6C08093	0.040	ND	1	3/8/2006	3/8/2006	
Sample ID: IPC0595-21 (PSZB-69-35 - Soil)				Sampled: 03/06/06				
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	6C08093	0.040	ND	0.998	3/8/2006	3/8/2006	
Sample ID: IPC0595-22 (PSZB-69-40 - Soil)				Sampled: 03/06/06				
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	6C08093	0.040	ND	0.995	3/8/2006	3/9/2006	
Sample ID: IPC0595-23 (PSZB-73-1 - Soil)				Sampled: 03/06/06				
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	6C08093	0.040	0.10	0.995	3/8/2006	3/9/2006	

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Patty Mata
Project Manager

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2520 E Sunset Rd. #3, Las Vegas, NV 89120 (702) 798-3620 FAX (702) 798-3621

Geomatrix-Corona
250 East Rincon Street, Suite 204
Corona, CA 92879
Attention: Rick Rees

Project ID: Aerojet Azusa
007190.004
Report Number: IPC0595

Sampled: 03/06/06
Received: 03/06/06

INORGANICS

Analyte	Method	Batch	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IPC0595-24 (PSZB-73-2.5 - Soil)				Sampled: 03/06/06				
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	6C08094	0.040	0.11	0.998	3/8/2006	3/9/2006	
Sample ID: IPC0595-25 (PSZB-73-5 - Soil)				Sampled: 03/06/06				
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	6C08094	0.040	0.042	0.998	3/8/2006	3/9/2006	

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Geomatrix-Corona
250 East Rincon Street, Suite 204
Corona, CA 92879
Attention: Rick Rees

Project ID: Aerojet Azusa
007190.004
Report Number: IPC0595

Sampled: 03/06/06
Received: 03/06/06

METHOD BLANK/QC DATA

INORGANICS

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 6C08093 Extracted: 03/08/06									
Blank Analyzed: 03/08/2006 (6C08093-BLK1)									
Perchlorate	ND	0.040	mg/kg						
LCS Analyzed: 03/08/2006 (6C08093-BS1)									
Perchlorate	0.521	0.040	mg/kg	0.500		104 85-115			
Matrix Spike Analyzed: 03/08/2006 (6C08093-MS1)									
Perchlorate	0.520	0.040	mg/kg	0.498	ND	104 80-120			
Matrix Spike Dup Analyzed: 03/08/2006 (6C08093-MSD1)									
Perchlorate	0.521	0.040	mg/kg	0.500	ND	104 80-120	0	20	
Batch: 6C08094 Extracted: 03/08/06									
Blank Analyzed: 03/09/2006 (6C08094-BLK1)									
Perchlorate	ND	0.040	mg/kg						
LCS Analyzed: 03/09/2006 (6C08094-BS1)									
Perchlorate	0.508	0.040	mg/kg	0.500		102 85-115			
Matrix Spike Analyzed: 03/09/2006 (6C08094-MS1)									
Perchlorate	0.613	0.040	mg/kg	0.499	0.11	101 80-120			
Matrix Spike Dup Analyzed: 03/09/2006 (6C08094-MSD1)									
Perchlorate	0.594	0.040	mg/kg	0.499	0.11	97 80-120	3	20	

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Geomatrix-Corona
250 East Rincon Street, Suite 204
Corona, CA 92879
Attention: Rick Rees

Project ID: Aerojet Azusa
007190.004
Report Number: IPC0595

Sampled: 03/06/06
Received: 03/06/06

DATA QUALIFIERS AND DEFINITIONS

ND Analyte NOT DETECTED at or above the reporting limit or MDL, if MDL is specified.
RPD Relative Percent Difference

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Geomatrix-Corona
250 East Rincon Street, Suite 204
Corona, CA 92879
Attention: Rick Rees

Project ID: Aerojet Azusa
007190.004
Report Number: IPC0595

Sampled: 03/06/06
Received: 03/06/06

Certification Summary

Del Mar Analytical - Irvine

Method	Matrix	Nelac	California
EPA 314.0 MOD.	Soil	N/A	N/A

Nevada and NELAP provide analyte specific accreditations. Analyte specific information for Del Mar Analytical may be obtained by contacting the laboratory or visiting our website at www.testamericainc.com

Del Mar Analytical - Irvine
Patty Mata
Project Manager

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IPC0595 <Page 8 of 8>

CHAIN-OF-CUSTODY RECORD

COR 10135

PROJECT NAME: AERJET - AISA PERLIN ELMER. ASC			DATE: 3-6-06			PAGE 1 OF 2		
PROJECT NUMBER: 7190.004			LABORATORY NAME: DEL MAX ANALYTICAL			CLIENT INFORMATION: AERJET - AISA		
RESULTS TO: Rick REES			LABORATORY ADDRESS: 17461 DECIAN ST.					
TURNAROUND TIME: SEE COMMENTS			IRVINE, CA 92614					
SAMPLE SHIPMENT METHOD: COURIER			LABORATORY CONTACT: PATTI MOTA			GEOTRACKER REQUIRED: YES (NO)		
			LABORATORY PHONE NUMBER: 949-261-1022			SITE SPECIFIC GLOBAL ID NO:		

SAMPLERS (SIGNATURE): P.J. SK			ANALYSES										CONTAINER TYPE AND SIZE		Soil (S), Water (W), Vapor (V), or Other (O)		Preservative Type		Cooled		MS/MSD		No of Containers		ADDITIONAL COMMENTS	
DATE	TIME	SAMPLE NUMBER	EPA 314																							
3-6-06	08:55	PS2B-68-7.5	X											4 OZ. GLASS JAR	S			X				1	NORMAL TAT			
3-6-06	08:57	PS2B-68-10	X											" "	S			X				1	NORMAL TAT			
3-6-06	09:07	PS2B-68-15	X											" "	S			X				1	NORMAL TAT			
3-6-06	09:10	PS2B-68-20	X											" "	S			X				1	NORMAL TAT			
3-6-06	09:17	PS2B-68-25	X											" "	S			X				1	NORMAL TAT			
3-6-06	09:20	PS2B-68-30	X											" "	S			X				1	NORMAL TAT			
3-6-06	09:27	PS2B-68-35	X											" "	S			X				1	NORMAL TAT			
3-6-06	09:35	PS2B-68-40	X											" "	S			X				1	NORMAL TAT			
3-6-06	10:06	PS2B-71-1	X											" "	S			X				1	24 HR. TAT			
3-6-06	10:10	PS2B-71-2.5	X											" "	S			X				1	24 HR. TAT			
3-6-06	10:00	PS2B-71-5	X											" "	S			X				1	24 HR. TAT			
* 3-6-06	09:45	PS2B-72-1	X											" "	S			X				1	24 HR. TAT			
* 3-6-06	09:50	PS2B-72-2.5	X											" "	S			X				1	24 HR. TAT			
* 3-6-06	09:55	PS2B-72-5	X											" "	S			X				1	24 HR. TAT			
3-6-06	10:55	PS2B-69-7.5	X											" "	S			X				1	NORMAL TAT			

RELINQUISHED BY:		DATE	TIME	RECEIVED BY:		DATE	TIME	TOTAL NUMBER OF CONTAINERS:		15
SIGNATURE: [Signature]		3-6-		SIGNATURE: [Signature]		3/6/06	1:00	SAMPLING COMMENTS:		
PRINTED NAME: PAUL JEFFELS		2006	12:00	PRINTED NAME: R. SHERIDAN				ALL SAMPLES AND ANALYSES ON		
COMPANY: GEOMATRIX				COMPANY: DMAC				NORMAL TURN AROUND TIME		
SIGNATURE: [Signature]		3/6/06	12:55	SIGNATURE: [Signature]		3-6-06	12:55	* SAMPLES PS2B-72-1, PS2B-72-2.5, PS2B-72-5		
PRINTED NAME: R. SHERIDAN				PRINTED NAME: CR. RUIZ				ON 24 HR. TURN AROUND TIME		
COMPANY: DMAC				COMPANY: DITAZ				ALL OTHERS ON NORMAL TAT		
SIGNATURE:				SIGNATURE:				250 East Rincon Street, Suite 204		
PRINTED NAME:				PRINTED NAME:				Corona, California 92879-1363		
COMPANY:				COMPANY:				Tel 951.273.7400 Fax 951.273.7420		

(240)

(3)



Geomatrix

COR 10136

[illegible]



Del Mar Analytical

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2520 E. Sunset Rd. #3, Las Vegas, NV 89120 (702) 798-3620 FAX (702) 798-3621

LABORATORY REPORT

Prepared For: Geomatrix-Corona
250 East Rincon Street, Suite 204
Corona, CA 92879
Attention: Rick Rees

Project: Aerojet Azusa
007190.004

Sampled: 03/06/06
Received: 03/06/06
Issued: 03/07/06 16:12

NELAP #01108CA California ELAP#1197 CSDLAC #10117

The results listed within this Laboratory Report pertain only to the samples tested in the laboratory. The analyses contained in this report were performed in accordance with the applicable certifications as noted. All soil samples are reported on a wet weight basis unless otherwise noted in the report. This Laboratory Report is confidential and is intended for the sole use of Del Mar Analytical and its client. This report shall not be reproduced, except in full, without written permission from Del Mar Analytical. The Chain(s) of Custody, 2 pages, are included and are an integral part of this report. This entire report was reviewed and approved for release.

CASE NARRATIVE

SAMPLE RECEIPT: Samples were received intact, at 3°C, on ice and with chain of custody documentation.

HOLDING TIMES: All samples were analyzed within prescribed holding times and/or in accordance with the Del Mar Analytical Sample Acceptance Policy unless otherwise noted in the report.

PRESERVATION: Samples requiring preservation were verified prior to sample analysis.

QA/QC CRITERIA: All analyses met method criteria, except as noted in the report with data qualifiers.

COMMENTS: Only the rush perchlorate sample results are included in this report. All other results will be sent under separate cover when complete.

SUBCONTRACTED: No analyses were subcontracted to an outside laboratory.

LABORATORY ID

IPC0595-12
IPC0595-13
IPC0595-14

CLIENT ID

PSZB-72-1
PSZB-72-2.5
PSZB-72-5

MATRIX

Soil
Soil
Soil

Reviewed By:

Del Mar Analytical, Irvine
Patty Mata
Project Manager



Del Mar Analytical

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Geomatrix-Corona
250 East Rincon Street, Suite 204
Corona, CA 92879
Attention: Rick Rees

Project ID: Aerojet Azusa
007190.004
Report Number: IPC0595

Sampled: 03/06/06
Received: 03/06/06

INORGANICS

Analyte	Method	Batch	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IPC0595-12 (PSZB-72-1 - Soil)								
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	6C06115	0.040	0.044	1	3/6/2006	3/7/2006	
Sample ID: IPC0595-13 (PSZB-72-2.5 - Soil)								
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	6C06115	0.040	0.043	1.01	3/6/2006	3/7/2006	
Sample ID: IPC0595-14 (PSZB-72-5 - Soil)								
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	6C06115	0.040	ND	1.01	3/6/2006	3/7/2006	

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Patty Mata
Project Manager

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Geomatrix-Corona
250 East Rincon Street, Suite 204
Corona, CA 92879
Attention: Rick Rees

Project ID: Aerojet Azusa
007190.004
Report Number: IPC0595

Sampled: 03/06/06
Received: 03/06/06

METHOD BLANK/QC DATA

INORGANICS

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 6C06115 Extracted: 03/06/06									
Blank Analyzed: 03/07/2006 (6C06115-BLK1)									
Perchlorate	ND	0.040	mg/kg						
LCS Analyzed: 03/07/2006 (6C06115-BS1)									
Perchlorate	0.517	0.040	mg/kg	0.500		103 85-115			
Matrix Spike Analyzed: 03/07/2006 (6C06115-MS1)									
Perchlorate	0.589	0.040	mg/kg	0.500	0.044	109 80-120			
Matrix Spike Dup Analyzed: 03/07/2006 (6C06115-MSD1)									
Perchlorate	0.602	0.040	mg/kg	0.501	0.044	111 80-120	2	20	

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Patty Mata
Project Manager

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IPC0595 <Page 3 of 5>



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Geomatrix-Corona
250 East Rincon Street, Suite 204
Corona, CA 92879
Attention: Rick Rees

Project ID: Aerojet Azusa
007190.004
Report Number: IPC0595

Sampled: 03/06/06
Received: 03/06/06

DATA QUALIFIERS AND DEFINITIONS

ND Analyte NOT DETECTED at or above the reporting limit or MDL, if MDL is specified.
RPD Relative Percent Difference

Del Mar Analytical, Irvine
Patty Mata
Project Manager

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Geomatrix-Corona
250 East Rincon Street, Suite 204
Corona, CA 92879
Attention: Rick Rees

Project ID: Aerojet Azusa
007190.004
Report Number: IPC0595

Sampled: 03/06/06
Received: 03/06/06

Certification Summary

Del Mar Analytical, Irvine

Method	Matrix	Nelac	California
EPA 314.0 MOD.	Soil	N/A	N/A

Nevada and NELAP provide analyte specific accreditations. Analyte specific information for Del Mar Analytical may be obtained by contacting the laboratory or visiting our website at www.testamericainc.com

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IPC0595 <Page 5 of 5>

CHAIN-OF-CUSTODY RECORD

COR 10135

PROJECT NAME AEROTET - AISA PERKIN ELMER AOC			DATE 3-6-06			PAGE 1 OF 2		
PROJECT NUMBER 7190.004			LABORATORY NAME DEL MAR ANALYTICAL			CLIENT INFORMATION AEROTET - AISA		
RESULTS TO Rick REES			LABORATORY ADDRESS 17461 DELMAR ST.			REPORTING REQUIREMENTS		
TURNAROUND TIME SEE COMMENTS			JEROME, CA 92614					
SAMPLE SHIPMENT METHOD COURIER			LABORATORY CONTACT PATTI MORA			GEOTRACKER REQUIRED YES (NO)		
			LABORATORY PHONE NUMBER 949-261-1022			SITE SPECIFIC GLOBAL ID NO		

SAMPLERS (SIGNATURE): PJL JPK			ANALYSES										CONTAINER TYPE AND SIZE	Soil (S), Water (W), Vapor (V), or Other (O)	Filtered	Preservative Type	Cooled	MS/MSD	No. of Containers	ADDITIONAL COMMENTS						
DATE	TIME	SAMPLE NUMBER	EPA 314																							
3-6-06	08:55	PS2B-68-7.5	X																4 oz. GLASS JAR	S			X		1	NORMAL TAT
3-6-06	08:57	PS2B-68-10	X																" "	S			X		1	NORMAL TAT
3-6-06	09:07	PS2B-68-15	X																" "	S			X		1	NORMAL TAT
3-6-06	09:10	PS2B-68-20	X																" "	S			X		1	NORMAL TAT
3-6-06	09:17	PS2B-68-25	X																" "	S			X		1	NORMAL TAT
3-6-06	09:20	PS2B-68-30	X																" "	S			X		1	NORMAL TAT
3-6-06	09:27	PS2B-68-35	X																" "	S			X		1	NORMAL TAT
3-6-06	09:35	PS2B-68-40	X																" "	S			X		1	NORMAL TAT
3-6-06	10:06	PS2B-71-1	X																" "	S			X		1	NORMAL TAT
3-6-06	10:10	PS2B-71-2.5	X																" "	S			X		1	NORMAL TAT
3-6-06	10:00	PS2B-71-5	X																" "	S			X		1	NORMAL TAT
* 3-6-06	09:45	PS2B-72-1	X																" "	S			X		1	NORMAL TAT
* 3-6-06	09:50	PS2B-72-2.5	X																" "	S			X		1	NORMAL TAT
* 3-6-06	09:55	PS2B-72-5	X																" "	S			X		1	NORMAL TAT
3-6-06	10:55	PS2B-69-7.5	X																" "	S			X		1	NORMAL TAT


RELINQUISHED BY:		DATE	TIME	RECEIVED BY:		DATE	TIME	TOTAL NUMBER OF CONTAINERS:		15
SIGNATURE: PJL		3-6-2006	12:00	SIGNATURE: [Signature]		3/6/06	12:00	SAMPLING COMMENTS:		
PRINTED NAME: PAUL JEFFELS				PRINTED NAME: R. SHERIDAN				All Samples are Analyzed on		
COMPANY: Geomatrix				COMPANY: DMF				Normal Turn Around Time		
SIGNATURE: [Signature]		3/6/06	12:55	SIGNATURE: [Signature]		3-6-06	12:55	* SAMPLES PS2B-72-1, PS2B-72-2.5, PS2B-72-5		
PRINTED NAME: R. SHERIDAN				PRINTED NAME: Dr. Ruiz				on 24 hr. Turn Around Time		
COMPANY: DMF				COMPANY: DMF				All others on Normal TAT		
SIGNATURE:				SIGNATURE:				250 East Rincon Street, Suite 204		
PRINTED NAME:				PRINTED NAME:				Corona, California 92879-1363		 Geomatrix
COMPANY:				COMPANY:				Tel 951.273.7400 Fax 951.273.7420		

(240)

(3)

CHAIN-OF-CUSTODY RECORD

COR 10136

PROJECT NAME: AGREST - AISA PEEKU EUNEC AUC				DATE: 3-6-06		PAGE 2 OF 2						
PROJECT NUMBER 7190.004		LABORATORY NAME DE MARE ANALYTICAL		CLIENT INFORMATION AGREST - AISA		REPORTING REQUIREMENTS						
RESULTS TO Rick REES		LABORATORY ADDRESS 17461 DORRIS ST.										
TURNAROUND TIME SEE COMMENTS		LABORATORY CONTACT JEVINE, CA 92614										
SAMPLE SHIPMENT METHOD FOURIER		LABORATORY PHONE NUMBER 444-261-1022		GEOTRACKER REQUIRED		YES <input type="radio"/> NO <input checked="" type="radio"/>						
SAMPLERS (SIGNATURE): Paul Jeffers		ANALYSES		SITE SPECIFIC GLOBAL ID NO								
DATE	TIME	SAMPLE NUMBER	EPA 314	CONTAINER TYPE AND SIZE	Soil (S), Water (W), Vapor (V), or Other (O)	Filtered	Preservative Type	Cooled	MS/MSD	No. of Containers	ADDITIONAL COMMENTS	
3-6-06	10:57	PS2B-69-10	X	4 oz Glass Jar	S			X		1	NORMAL TAT	
3-6-06	11:23	PS2B-69-15	X	" "	S			X		1	NORMAL TAT	
3-6-06	11:30	PS2B-69-20	X	" "	S			X		1	NORMAL TAT	
3-6-06	11:37	PS2B-69-25	X	" "	S			X		1	NORMAL TAT	
3-6-06	11:41	PS2B-69-30	X	" "	S			X		1	NORMAL TAT	
3-6-06	11:47	PS2B-69-35	X	" "	S			X		1	NORMAL TAT	
3-6-06	11:50	PS2B-69-40	X	" "	S			X		1	NORMAL TAT	
3-6-06	11:35	PS2B-73-1	X	" "	S			X		1	NORMAL TAT	
3-6-06	11:30	PS2B-73-2.5	X	" "	S			X		1	NORMAL TAT	
3-6-06	11:25	PS2B-73-5	X	" "	S			X		1	NORMAL TAT	
RELINQUISHED BY:			DATE	TIME	RECEIVED BY:			DATE	TIME	TOTAL NUMBER OF CONTAINERS:		
SIGNATURE: Paul Jeffers			3-6-06	12:00	SIGNATURE: E. Sheridan			3/6/06	12:00	10		
PRINTED NAME: PAUL JEFFERS						PRINTED NAME: E. SHERIDAN						
COMPANY: GEOMATRIX						COMPANY: DE MARE						
SIGNATURE: E. Sheridan			3/6/06	12:55	SIGNATURE: G. Ruiz			3/6/06	12:55			
PRINTED NAME: SHERIDAN						PRINTED NAME: G. RUIZ						
COMPANY: DMAC						COMPANY: DMAC						
SIGNATURE:						SIGNATURE:						
PRINTED NAME:						PRINTED NAME:						
COMPANY:						COMPANY:						
250 East Rincon Street, Suite 204 Corona, California 92879-1363 Tel 951.273.7400 Fax 951.273.7420						 Geomatrix						



LABORATORY REPORT

Prepared For: Geomatrix-Corona
250 East Rincon Street, Suite 204
Corona, CA 92879
Attention: Rick Rees

Project: Aerojet Azusa
007190.004

Sampled: 03/07/06
Received: 03/08/06
Issued: 03/20/06 15:57

NELAP #01108CA California ELAP#1197 CSDLAC #10117

The results listed within this Laboratory Report pertain only to the samples tested in the laboratory. The analyses contained in this report were performed in accordance with the applicable certifications as noted. All soil samples are reported on a wet weight basis unless otherwise noted in the report. This Laboratory Report is confidential and is intended for the sole use of Del Mar Analytical and its client. This report shall not be reproduced, except in full, without written permission from Del Mar Analytical. The Chain of Custody, 1 page, is included and is an integral part of this report.

This entire report was reviewed and approved for release

CASE NARRATIVE

SAMPLE RECEIPT: Samples were received intact, at 3°C, on ice and with chain of custody documentation.

HOLDING TIMES: All samples were analyzed within prescribed holding times and/or in accordance with the Del Mar Analytical Sample Acceptance Policy unless otherwise noted in the report.

PRESERVATION: Samples requiring preservation were verified prior to sample analysis.

QA/QC CRITERIA: All analyses met method criteria, except as noted in the report with data qualifiers.

COMMENTS: No significant observations were made.

SUBCONTRACTED: No analyses were subcontracted to an outside laboratory.

LABORATORY ID	CLIENT ID	MATRIX
IPC0917-01	PSZB-72-7.5	Soil
IPC0917-02	PSZB-72-10	Soil
IPC0917-03	PSZB-72-15	Soil
IPC0917-04	PSZB-72-20	Soil
IPC0917-05	PSZB-72-25	Soil
IPC0917-06	PSZB-72-30	Soil
IPC0917-07	PSZB-72-35	Soil
IPC0917-08	PSZB-72-40	Soil

Reviewed By:

Del Mar Analytical - Irvine
Patty Mata
Project Manager



Del Mar Analytical

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2520 E. Sunset Rd. #3, Las Vegas, NV 89120 (702) 798-3620 FAX (702) 798-3621

Geomatrix-Corona
250 East Rincon Street, Suite 204
Corona, CA 92879
Attention: Rick Rees

Project ID: Aerojet Azusa
007190.004
Report Number: IPC0917

Sampled: 03/07/06
Received: 03/08/06

INORGANICS

Analyte	Method	Batch	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IPC0917-01 (PSZB-72-7.5 - Soil)				Sampled: 03/07/06				
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	6C13075	0.040	ND	0.998	3/13/2006	3/13/2006	
Sample ID: IPC0917-02 (PSZB-72-10 - Soil)				Sampled: 03/07/06				
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	6C13075	0.040	ND	0.998	3/13/2006	3/13/2006	
Sample ID: IPC0917-03 (PSZB-72-15 - Soil)				Sampled: 03/07/06				
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	6C13075	0.040	ND	0.998	3/13/2006	3/13/2006	
Sample ID: IPC0917-04 (PSZB-72-20 - Soil)				Sampled: 03/07/06				
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	6C13075	0.040	ND	0.998	3/13/2006	3/13/2006	
Sample ID: IPC0917-05 (PSZB-72-25 - Soil)				Sampled: 03/07/06				
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	6C13075	0.040	ND	0.998	3/13/2006	3/13/2006	
Sample ID: IPC0917-06 (PSZB-72-30 - Soil)				Sampled: 03/07/06				
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	6C13075	0.040	ND	0.995	3/13/2006	3/13/2006	
Sample ID: IPC0917-07 (PSZB-72-35 - Soil)				Sampled: 03/07/06				
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	6C13075	0.040	ND	0.995	3/13/2006	3/13/2006	
Sample ID: IPC0917-08 (PSZB-72-40 - Soil)				Sampled: 03/07/06				
Reporting Units: mg/kg								
Perchlorate	EPA 314.0 MOD.	6C13075	0.040	ND	0.998	3/13/2006	3/13/2006	

Del Mar Analytical - Irvine
Patty Mata
Project Manager

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IPC0917 <Page 2 of 5>



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Geomatrix-Corona
250 East Rincon Street, Suite 204
Corona, CA 92879
Attention: Rick Rees

Project ID. Aerojet Azusa
007190.004
Report Number: IPC0917

Sampled: 03/07/06
Received: 03/08/06

METHOD BLANK/QC DATA

INORGANICS

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 6C13075 Extracted: 03/13/06									
Blank Analyzed: 03/13/2006 (6C13075-BLK1)									
Perchlorate	ND	0.040	mg/kg						
LCS Analyzed: 03/13/2006 (6C13075-BS1)									
Perchlorate	0.494	0.040	mg/kg	0.500		99 85-115			
Matrix Spike Analyzed: 03/13/2006 (6C13075-MS1)									
Perchlorate	0.513	0.040	mg/kg	0.499	ND	103 80-120			
Matrix Spike Dup Analyzed: 03/13/2006 (6C13075-MSD1)									
Perchlorate	0.509	0.040	mg/kg	0.499	ND	102 80-120	1	20	

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DATA QUALIFIERS AND DEFINITIONS

ND Analyte NOT DETECTED at or above the reporting limit or MDL, if MDL is specified.
RPD Relative Percent Difference

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Project Manager

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007190.004
Report Number: IPC0917

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Certification Summary

Del Mar Analytical - Irvine

Method	Matrix	Nelac	California
EPA 314.0 MOD.	Soil	N/A	N/A

Nevada and NELAP provide analyte specific accreditations. Analyte specific information for Del Mar Analytical may be obtained by contacting the laboratory or visiting our website at www.testamericainc.com

Del Mar Analytical - Irvine
Patty Mata
Project Manager

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IPC0917 <Page 5 of 5>

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